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TRANSACTIONS

OF THE

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND

WITH

AN ABSTRACT OF THE PROCEEDINGS; THE PREMIUMS OFFERED
BY THE SOCIETY IN 1883; AND LIST OF MEMBERS.

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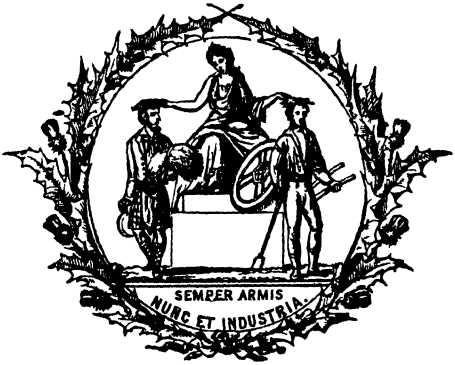

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TRANSACTIONS

OF

THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

THE PHYSIOLOGICAL DISTINCTIONS IN THE CONDITION OF THE SCOTTISH PEASANTRY.

By JAMES TAIT, Edinburgh.

[*Premium—Fifteen Sovereigns.*]

IN Scotland, till a comparatively recent period, there were three distinct races of men inhabiting different parts of the country, which could be clearly defined. The Lowlands, except Caithness, were inhabited by that mixed race to which the name of Anglo-Saxon is generally applied. This is an energetic race, sprung from a mixture of the bold and hardy natives which have at different times invaded the country, and settled among its original inhabitants. These were the Goths, the Romans, the Gauls or Celts, the Saxons, the Danes, the Normans, and the Norsemen. In Galloway in the south, and in the north-east from Forfar to Banff, there was probably a larger admixture than elsewhere of the old Pictish element. The Highlands were occupied by a purely Celtic race, retaining their ancient language, and showing in their configuration and general character the peculiarities of the Celt. In the islands of the north, in Caithness, and in the fishing villages as far south as Newhaven, the majority of the inhabitants are of purely Norse descent, but they have adopted the language and generally the customs of the country in which they live. Till the year 1820 these were the three races of men in Scotland, but during that year began an invasion or immigration of Irish, which slowly increased, till it attained large dimensions about 1840, when the making of railways began, and now in many towns the Irish are from five to fifteen per cent. of the whole population. If we include children born to Irish parents in this country, there is probably thirty per cent. in some towns of Irish extraction. The immigration of such a body of labourers of the lowest class, with untidy habits, and with scarcely any education, has exerted a prejudicial influence especially in the west. The great bulk of the Irish have not improved by contiguity with the native Scots, but the earlier inhabitants have become deteriorated by associating with their new neighbours.

Understanding the term peasant as denoting a countryman, a rustic, or one whose occupation is rural labour, the class, in many parts of Scotland, differs materially in physiological condition, as well as in other respects, from its state in past times. Three hundred years ago the peasantry in the south of Scotland, especially on the great estates of the church, consisted of several distinct grades. One class, known as bondsmen or serfs, occupied a position little superior to the oxen of which they had charge, and were often transferred, along with other stock on the land, from one proprietor to another. Besides the hereditary bondsmen, over whom the feudal lords of the manor exercised large powers of compulsory servitude, there were other classes who might properly be designated peasants. In particular, there were the cottars, usually collected in hamlets, and corresponding in position to the crofters of modern times. Each cottar occupied from one to nine acres of land, the rent of which varied from one to six shillings yearly, with services not exceeding nine days' labour. There was another grade called husbandmen, of whom there were many on the lands of Kelso Abbey, and who held from the Abbey, by a yearly tenure, a definite quantity of land called a husbandland, estimated at 26 Scotch or 32 English acres, "where scythe and plough may gang." Every tenant of a husbandland kept two oxen, and six of them united to work the common plough, a ponderous machine drawn by a team of twelve oxen. The husbandmen were bound to keep good neighbourhood, and were specially compelled to furnish the requisite pair of oxen to work the common plough. In the barony of Bowden the monks of Kelso had twenty-eight husbandmen, each of whom paid 6s. 8d. of money rent, besides considerable services in harvest and sheep-shearing, in carrying peats and carting wool, and fetching the abbot's commodities from Berwick. Still another class who might be included among the peasantry, were the yeomen or "bonnet-lairds," who held their land in perpetuity, paying only a moderate quit-rent, besides giving certain services in ploughing and harvest.

Till the beginning of the eighteenth century these classes of peasantry continued practically unchanged; and their disappearance was so gradual that many of them continued during part of the present century. Distinguished by their frugal habits and simple manners, but great sincerity and earnestness in the discharge of life's duties, their departure is viewed by many with regret:—

> "That grey-haired race is gone of look sublime,
> Calm in demeanour, courteous and sincere;
> Yet stern when duty called them, as their clime,
> When it flings off the autumnal foliage sere,
> And shakes the shuddering woods with solemn voice severe."

About the Scottish rural life of the last century there was a certain patriarchal simplicity which still throws around it a degree of fascination. The farm-house was usually a plain, substantial edifice, which occupied one side of a quadrangle, in which the young cattle were folded, the other three sides being enclosed and sheltered by the barns, stables, and other offices. A kitchen garden, stocked with the common pot herbs then in use, and sometimes with a few fruit trees, extended on one side, sheltered perhaps by a hedge of bourtree or alder, and often skirted by a few aged forest trees, while the low thatched dwellings of the hinds and cottars stood at a little distance, each with its small cabbage garden or kail-yard, and its stack of peat or turf fuel in front. The master's household, exclusive of his own family, would consist of six or seven unmarried male and female servants. Besides the married farm-servants there were cottars, who were rather a sort of farm-retainers than cottars, and in lieu of rent gave their service to the master in hay time and harvest, and at other stated periods. In remote districts, the farmer with his work-people formed a little independent community, deriving their subsistence almost exclusively from the farm, maintaining themselves with much frugality, and always industriously occupied, but never oppressed with work. The connection between master and servant had more of a patriarchal and less of a commercial character than it has now. Masters took a parental charge of servants, and the feeling was reciprocated. The master was up first in the morning, consulting on the business of the day, and he was seldom from home. They sat together, ate together, worked together; and when the labours of the day were over, they conversed familiarly together. The busy seasons were spring and autumn; and then there was an air of hearty joyousness which made the work easy. Field sports and athletic exercises were common in winter; and in the long evenings there were light occupations which gave occasion for innocent hilarity. There were two special occasions of joyous festivity—the kirn at the close of the harvest, and the new year—in both of which all the little community heartily joined.

With much that is admirable in the social arrangements thus described, there was general ignorance and disregard of the physiological laws relating to health and longevity. The situation of the farm-house contiguous to the cattle courts was about the worst possible, while the rooms both in the farm-house and the cottages, were small, dark, and badly ventilated. Land was undrained, stagnant marshes were abundant, garbage of all kinds was allowed to accumulate in front of the house; and, in adverse seasons, which were not few, there was scarcity which at times developed into famine. Ague and fever prevailed extensively, and small-pox periodically carried off thousands of victims. Instead of seeking to ascertain and remove the physical causes of these evils, our worthy ancestors regarded them as inevitable inflictions to which patient submission was a duty. It has been pointed out, for example, that the Rev. Ebenezer Erskine of Portmoak lamented that his wife bore several children while in precarious health, that in the year 1713 three of his children died, that a fourth died in 1720, and that in 1723 a fifth was at the point of death but recovered. He regarded these bereavements as "severe trials" and "sore afflictions," to be endured with submission; but incidentally he remarks that the situation of the manse was "unwholesome." In our day prompt measures would have been taken to remove whatever was unwholesome about the manse, and to change its site altogether if necessary. As regards attention to physiological laws, great progress has been made, in which the peasantry have their full share. The drainage and better cultivation of land has been conducive to health; and diseases once common are now rarely witnessed. Small-pox is rare, agues have ceased, fevers occur occasionally, but the causes and cures are so well known that their virulence is much abated. Even the climate has been improved by the better cultivation of land. It is known that one cubic foot of water, in the process of evaporation, deprives three millions of cubic feet of air of one degree of temperature; and an undrained field growing rushes has a permanent temperature from four to six degrees lower than an adjoining field drained and growing wheat. Besides these general improvements, much more attention is paid to the construction of healthy dwellings, by which many premature deaths are averted. In regard to food, it has been ascertained precisely what is wanted to maintain a healthy human frame. Carbon must be supplied to the lungs, and this is done by taking a certain quantity of starch or sugar into the stomach. The fat of the body must be maintained, and a certain proportion of fat must therefore mingle with the food. The muscles must be sustained, and this is done by introducing a certain proportion of glutinous or albuminous matter into the system. A quantity of mineral matter must be added so as to keep up the supply of flesh, blood, and bones. The necessary ingredients are included in the oatmeal and milk, which have always formed the staple food of the Scottish peasant; but it is all the better if to these can be added potatoes, eggs, and some proportion of animal food. In looking at the physiological distinctions in the condition of the Scottish peasantry, it will be necessary to describe their condition in relation to the processes necessary to build up and maintain in strength the physical frames of working men and women, and to the production and development of strong and healthy children. Nor will it be right to ignore the higher part of man's nature, for intellectual and moral excellence, as well as physical strength, conduce to superiority in the humbler as well as in the higher ranks of society. It will not be necessary to give any precise statement of physiological laws; it will be more useful to look at the condition of the Scottish peasantry in different districts, as regards their homes, their food, their general mode of living, pointing out what improvements have been made in their condition tending to the maintenance of strength and the prolongation of life, and then make any suggestions that may be useful, with a view to promote still farther progress.

In the south-east of Scotland, including the counties of Roxburgh, Berwick, and the Lothians, the small farmer and the bonnet-laird have disappeared, and the cottar, together with the tradesmen in villages, have become practically extinct; and there remain to represent the peasantry only the shepherds, the stewards, and the requisite number of ploughmen with their families. The best class consists of the shepherds, who are found among the Cheviots, the Lammermuirs, and the uplands of Selkirkshire, Dumfriesshire, Kirkcudbright, Wigtown, and Ayr. Morally, intellectually, and physically they are a superior race of men. In 1867, Mr. George Culley, one of the assistant commissioners on the employment of women and young persons in agriculture, wrote regarding the shepherds of the Cheviots:—"They are the finest set of men I ever came in contact with." The manner in which they are paid is chiefly in stock, that is, they have a flock of sheep called the shepherd's pack, numbering from 45 to 50, a cow's keep, 65 stones of oatmeal, a quantity of potatoes planted, and a free house. The value of these wages depends greatly on the price of wool and mutton, but cannot be taken at less on an average than £50 a-year. Often they have more than one cow, and the butter made by the careful housewives in these shepherds' houses on the Cheviots, redolent of green pastures and clear cold spring water, brings the highest price in the market. The shepherds have the sole charge of flocks pastured on stormy hills, and thus occupy a position of great trust and responsibility. They have a high repute for honesty and sagacity, and are often more careful than the master himself. The same family retains the herding from one generation to another. Probably nothing can be done to improve the physiological condition of these shepherds and their families. They have pure air, fairly commodious cottages, and abundance of meal, potatoes, milk, and eggs, with a proportion of animal food. At certain times of the year they have hard work, anxiety, and exposure, and at all times they are liable to get wet, though their strong boots and thick plaids offer a good defence against both wet and cold. At other times they have light work and a good deal of leisure, which is partly devoted to mental culture. They are a long lived race, and it has been observed that the parish of Kirknewton, at the east end of the Cheviots, has the lowest death-rate of any parish in England, but in old age they sometimes suffer from rheumatism. The self-reliance and ability of the shepherds are manifested in various ways, one of which is the maintenance and management of shows for the stock of shepherds and ploughmen.

The ploughmen of the eastern border counties resemble the shepherds, so far as regards house accommodation and payment in kind; but they have less responsibility and discretionary power, and life with them is monotonous and mechanical. In this district, as observed by Mr. George Culley, "the system of payment in kind receives its widest development." A married farm-servant receives only £5 in money, the rest of the wages consisting of a cottage rent free, the keep of a cow, carriage of fuel, potato ground, and certain allowances of oats or oatmeal, barley, and peas. In Perthshire the grain payments are reduced to an allowance of oatmeal, and, instead of a cow's keep, a Scotch pint of new milk is given daily, the money wage being increased to about £20. In Fife the same system prevails, and the change to the cow and the grain payments of the border counties takes place gradually from about the line of the Forth. Formerly cows, as part payment of ploughmen's wages, were common in West and Mid-Lothian, but now they are rare, if not quite extinct, in the former county, and in the northern or more populous part of the latter. It is not till we enter Haddingtonshire that we find the cow regularly established as part of the ploughman's wages.

Objections are raised against the whole system of payments in kind. On the one hand it is said that the ploughman is thereby placed at the mercy of a hard master, or an unscrupulous steward, that if the harvest be unpropitious he is paid with inferior grain, and that, having little money, the householder is compelled to barter his corn or meal for other commodities, and is not always able to sell it to the best advantage. Masters, on the other hand, complain that men are less easily pleased than formerly in respect of gains, and that both trouble and ill-feeling would be saved if the payments were made in money. It seems obvious, however, that payment in kind is best for the ploughman, but in the case of those with small households it might be so modified that less meal and more money could be given, and so the necessity for selling meal would be avoided. The advantages of the system are certainty of payment for the whole year both in health and in sickness, the absence of temptation to spend money, or to work overtime, as in piecework; a constant supply of good wholesome food at prime cost, including abundance of meal and milk, butter, cheese, vegetables, home-fed bacon, and fuel brought to the door free of charge. There are exceptions, doubtless, but as a rule those who are paid in kind are best off. The opinion of Mr. George Culley on this point is emphatic:—"The most comfortable houses, and the most contented labourers, are to be found in that part of my district in which the kind payment is most developed. No small part of these advantages I would assign to the cow. There is an absolute gain between the cost of the cow's keep to the farmer, and its value to the labourer, arising from the industry and attention of his wife. To attend to her household duties and her cow is sufficient employment for the farm-labourer's wife in the cow counties, and both are well attended to." Besides furnishing good food for the children and congenial occupation to the wife, the possession of a cow adds to a ploughman's sense of self-respect. There is pleasure in being the absolute owner of live stock, even though it be only a cow and a pig. Every member of a working man's family takes an interest in "our cow;" and there is always more or less hopefulness in the idea that the family gains may be increased by the produce of the cow. There is also a spirit of friendly emulation among working men who shall have the best cow, and make the most of her produce. It is also a direct inducement to economy and good management, so as to make out a good balance of profit. Agricultural societies recognise these principles, by including in the list of premiums a set of prizes for working men's cows and their produce. Another advantage consists in the business training and the mental occupation which some working men derive from the management of Cow Insurance Clubs. A good many of these exist in the counties of Haddington, Berwick, and Roxburgh, and the general arrangement is that by a payment of 8s. or 10s. a-year, £12 or thereby shall be obtained from the club on the death of a cow. In connection with the garden and potatoes in the field, also, there is pleasant occupation; and it is a source of honest pride to look on a tidy garden with a good crop of potatoes. It is to be regretted that fruit, even of the small and common kind, seldom forms any portion of a working man's crop. This may be owing in part to frequent flittings, which make it impossible for anyone to be sure that he will eat the gooseberries even though he plant the bushes; but the want of some gooseberry and currant bushes is a palpable defect. With the warm summer weather comes a desire for fruit, and if a corner of a working man's garden could be reserved for such a crop, there would be less likelihood of those garden depredations in which young people are prone to indulge. It is desirable that bees should be added to the live stock of working men. They would be a source of interesting occupation, and might yield a profit, while they would furnish many a lesson of diligent perseverance. The system as now existing includes many advantages of the croft system, without the disadvantages of squalid huts, insufficient occupation, and uncertain returns. Nor can it be said with truth that even female workers are over-taxed. In summer they must be early at work in the morning, but they are physically a splendid race, and their healthful and cheerful looks in the turnip or harvest field, with their substantial and suitable dress, present a favourable comparison with those of any other operatives in the kingdom. Medical evidence is overwhelming as to the absence of disease, and the usual complaints attendant on debility. Many of them are equally conspicuous as good wives and mothers.

House accommodation in the south and east of Scotland is generally good; on some estates it is excellent. The cottages are provided by land-owners, and are held by the farmer on the same terms as his own dwelling and other farm-buildings. In cottage building great progress has been made during the past fifty years, and in promoting this movement the Highland and Agricultural Society of Scotland has done its part. Impressed with a desire to improve the condition of the working classes, and anxious to remove the reproach which our southern neighbours had cast on the Scottish peasantry, of being deficient in habits of order and cleanliness, the Society proposed to give premiums, under certain regulations, to a limited number of parishes, for the best kept cottages and gardens. It soon appeared that the root of the matter had not been reached, and that, instead of offering premiums to cottagers for the best kept dwelling, the first step in the process should be to offer premiums to the proprietors who should build on their estates the most approved specimens of cottages, and afterwards to those who should improve existing houses. In the premium list of 1847, the Society offered its gold medal to "the proprietor in Scotland who shall have erected on his estate in 1847, 1848, and 1849 the most approved farm-steading, having reference to the accommodation of farm-servants." Gradually the efforts of the Society bore fruit, and in 1867 Mr. George Culley wrote:—"There is probably no district in Scotland where the improvements in cottage accommodation has made so much progress as in the south-eastern counties. I know no county in England where the average cottage accommodation is as good as in Berwickshire, a remark which would also apply to part of Roxburghshire and East Lothian."

In the south-west of Scotland the condition of the peasantry differs materially from that which has been described above. Shepherds, indeed, in the pastoral districts of Dumfriesshire are unsurpassed by rural labourers anywhere. They are possessed of great intelligence and integrity and self-reliance. Living retired among the hills, they have no opportunity of spending money, and the strictest economy is practised as a matter of necessity, though it becomes also a habit. They are generally paid in kind, having a pack of forty-five sheep, pasture and hay for a cow, an acre of land rent free, sixty stones of oatmeal, and a free house. The practice of paying in kind, however, is falling into disuse, which is matter for regret, as it will destroy that community of interest between employer and employed, which, apart from fidelity, is one of the best securities for faithful service; and it will reduce a most worthy class of men to the level of a married ploughman in the district, whose one object is to live from day to day, leaving to his children the same prospect of hopeless toil which has marked his own career. In Ayrshire, the shepherds have no pack of sheep, but have pasture and hay for two cows, ten bolls of meal, a cart-load of potatoes, fuel carted, a cottage and garden free, and from £16 to £18 in money. Farms are smaller than in the eastern counties, and not a few are worked with one pair of horses, in which case the labour is done by the farmer and his family, with occasional help from cottars. Agricultural labourers are paid partly in money, partly in kind, including ten bolls of oatmeal, a ton of potatoes, or the use of land to grow them, coal or peat, food in harvest, and a cottage with a small garden rent free; but there is rarely allowed the privilege of keeping a cow or even a pig, on the ground that this affords inducements to little acts of peculation. On some farms the servants, male and female, are boarded in the kitchen, in which case they have for dinner butcher meat or bacon with vegetables. Day labourers rarely taste animal food. Their dinner consists generally of bread and cheese and tea; their supper of porridge or potatoes, with such milk as they can obtain. On some estates good houses have been provided, which are not in all cases appreciated, and it is a common practice to put as many beds as possible into the kitchen, because it is alleged to be unsafe in such a moist climate to sleep in a room without a fire. In Dumfriesshire, and in the Stewartry of Kirkcudbright, the wives of cottars often work in the fields, and, in general, make bad housekeepers. Food is wasted, because it is badly cooked; and even when the family earnings are considerable, there is little comfort owing to defective arrangements. In Wigtownshire payments are generally made in kind, but wages are lower than in counties further east, because of the influx of Irish labourers, and the consequent superabundance of workers.

In the counties of Ayr, Renfrew, and Lanark the condition of the peasantry is anything but satisfactory. Part of the work is done by gangs, locally called "squads," consisting chiefly of the wives and daughters of Irishmen, who in large numbers have settled in the district. A good deal of work is done also by the wives of miners, who, though earning high wages, find it necessary to supplement them, as their style of living is extravagant. House accommodation is poor, few cottages having more than one room, into which are crowded husband, wife, and perhaps seven or eight children. Morally and intellectually, the farm labourers of Ayrshire have deteriorated. An adverse influence has been exerted by the intermixture of Irish immigrants, who have gradually overspread the county. The mode of living has also changed. Formerly the agricultural labourer was contented with oatmeal porridge and potatoes, with milk, for his daily food, but now tea and wheaten bread form a large part of his diet, which increase expenditure, while really less conducive to vigour. Tea, tobacco, and whisky consume a large portion of the wages; and generally the labourer spends all his earnings, looking to the poor-rate as a last resource. Nor do the wives as a rule make the most of the household income; and farmers have been known to part with good servants because they had got into difficulties through the wife's extravagance. In the counties of Renfrew and Lanark the population is very mixed, both Highlanders and Irish having largely intermingled with the original inhabitants. The farms are generally small, and the tenant is little higher in the social scale than the labourer. Often the farmer or his son will hold the plough, while the wife and daughters, with the aid of perhaps one servant, will do the housework, and take charge of perhaps twenty cows. The servants, male and female, are boarded in the farm-kitchen, and the whole household eats at the same table. Married men and their families have porridge and milk for breakfast; oat-cake or other bread, with butter and cheese, for dinner; and potatoes with salt for supper. It is not uncommon for a farmer's son to become a ploughman, or for a ploughman to get a farm, but often the farmer has less ready money than his servant. The farmer and his household are compelled to work hard, with little leisure, and not much comfort beyond the sense of comparative independence.

The "kitchen system," as it is called, which exists largely in the counties of Lanark and Renfrew, is found also in the counties of Aberdeen and Banff. It is undoubtedly preferable to the bothy system, which prevails in the counties of Perth, Fife, Forfar, and Kincardine. Admitting that in some instances men are well cared for in bothies, this is not always the case; and, in any circumstances, it is a state of matters only to be tolerated because it is necessary. Without discussing the question whether or not it tends to immorality, we may say it is an unnatural way of living, and the only right plan is for men and women to have facilities for marriage at a proper age. In this respect the kitchen system is also defective, and the cottage system alone is defensible. The kitchen system can exist only where a farmer is willing to associate with his work-people, and dine at the same table. But when farms increase in size, and the tenant rises in the social scale, he objects to mingle with his servants, and the ladies of the household will not endure the inconvenience caused by a troop of dirty field-workers invading the kitchen three times a-day. It is said, also, to have become unworkable, for the additional reasons that the men are less easily pleased about food, and that immorality results from associating with the female servants in the kitchen. If this be true, it seems to indicate a deterioration in moral character among the peasantry, but it confirms the opinion that the natural way of living is the cottage system, where men and women can live in families.

In the West and North Highlands and the Hebrides the physiological condition of the people is peculiar. There is a mixture of the Celtic and the Scandinavian races, the latter distinguished by fair hair and skin, blue eyes, greater stature, and a less impulsive temperament than the Celt, of whom the distinctive features are angular lines about the cheeks and chin, darker skin and hair, smaller stature, and a more fiery and impulsive nature than either the Saxon Lowlander, or the Scandinavian. In parts of Argyleshire, including some of the more southerly islands of the Hebrides, the physiological condition of the peasantry is not satisfactory. They are deficient in thrift, and are far behind in the knowledge and practice of good economical cookery. Instead of getting oatmeal, or even wheatmeal, and baking bread, they make housekeeping expensive by the constant use of the less nourishing fine loaves, biscuits, tea, and sugar. Much money is spent on strong drink, tea, and tobacco. Employers of labour neglect to provide for their workmen an abundant supply of milk, and so they are driven to the less wholesome and more expensive commodities of tea and beer. Nor do employers furnish their work-people with a plot of garden ground, the keeping of which would provide food for mind and body. Even the keeping of fowls is prohibited; and there are no pigs. Lethargy is a prevailing characteristic; and we have witnessed, in Argyleshire, manse gardens overgrown with weeds, with trees and bushes unpruned; and so the little spots which should have been specimens of rich cultivation, were fair illustrations of the sluggard's garden. We might hope that the spread of education would tend to improve the condition of the peasantry; but this expectation is discouraged when we see that parish ministers, who should be educated men, are no better than their neighbours. Better wages would not, meanwhile, produce greater comfort; the great want is such a change in the habits of the people as shall promote intelligence, thrift, industry, economy, cleanliness, and self-respect among the community.

The croft system, once common in Scotland, has gradually *receded* northward, till little of it is found in Argyleshire, almost none in the islands of Islay and Mull, but a larger amount in the counties of Inverness and Ross, and a great deal in the islands of Skye and Lewis. It is generally characterised by poor industry, meagre returns, and a state of poverty bordering on starvation; but under certain conditions and regulations the system is not without some good features. As a specimen of its working under fair auspices, we submit a picture, of which the materials were gathered from personal observation in the island of Skye during the summer of 1881. The crofts referred to are on the estate of Grishornish, owned by Kenneth Macleod Robertson, Esq., to whom it was bequeathed by an uncle; and it is managed during his son's minority by John Robertson, Esq. About thirty-nine families are united into what is locally called a township, which, in this instance, includes a "club farm." Each member of the little community has a house, together with a lot or a half lot of arable land. The occupier of a lot pays £8 a-year; the occupier of half a lot pays £4. On a lot may be sown four bolls of oats, on half a lot two bolls, and the space occupied with potatoes will be about a quarter of the space occupied by oats. Every householder builds his own house, and keeps it in repair. The houses are constructed of loose stones, without cement, built into a wall six feet high, and the roof is thatched. Those we entered were capacious enough, having a kitchen, generally with a fire in the middle of the floor, and a wide chimney right over it, and in a corner at the further end, a door opening into an inner apartment, where were a bed or two, and the best furniture. In these ben ends, the fireplace was usually at the side, with, in most cases, some kind of grate. In one kitchen was a neat little range, with the oven on one side, and hot water on the other. In some instances the cows entered at the same door with the family, and occupied an open space, which was separated only by a thin partition from the kitchen, and it was thickly bedded with short heather, but in most cases there were out-houses for the cattle. If any family leave the place, valuators are appointed, and the house is handed over to his successor, who is bound to pay the outgoing tenant whatever the valuators may determine. Each tenant of a lot can keep four cows with their followers for one year; the occupier of half a lot can keep two cows with their followers. In summer, the cows pasture on the hills; after the crops are removed, they graze over the lots; and in winter each crofter maintains his own stock with the help of what has been produced on his croft. If anyone is unable to acquire the requisite number of cattle, he can sub-let part of his right to a neighbour; but any accumulation of strength by a member of the little fraternity is discouraged; and the man who acquires more than his proper share has to pay a small premium for his success. There are six horses in the township, and anyone who gets the use of them pays for it; but most of the work is done with the crooked spade. In addition to their arable crofts, the thirty-nine families own a flock of sheep, over 750 in number, which are pastured on the hill. No individual owns any particular sheep—the whole flock is the property of the corporation, and is tended by a shepherd, under the superintendence of two managers elected by the tenants. The managers are responsible for all sales and expenses, the shepherd has sole charge of the sheep, and the accounts are settled once a-year. In the beginning of 1881 the result of a division gave to each occupier of a lot £5, 8s. 2d., which, set against his rent of £8, left £2, 11s. 10d. to be made up from his croft or otherwise for rent, besides the maintenance of his family. The occupier of a lot will obtain from £12 to £16 a-year for stirks. The food in winter consists largely of potatoes and fish. If need be, they can make an economical dinner from shell-fish gathered on the shore. In summer they have oatmeal, milk, and eggs. Butcher meat they never taste. Eggs are abundant. The hens, inhabiting the same house with the human beings, are kept warm in winter, and, as a consequence, begin early in spring to produce eggs. Able-bodied men go to the east coast herring fishing early in July, after their crops are planted, returning home in September, in time for harvest, with £10 or £12 in their pockets. Wool is spun by the women, and made into garments by weavers living in the neighbourhood, and generally the people are well and warmly clothed. Thus they have abundance of fresh air, good clothing, potatoes, fish, oatmeal, milk, and eggs; they have abundance of peats, and the fish supply oil for their lamps, as well as good wholesome food.

Longevity of the Peasantry.

It seems to be established as a fact that in no country of Europe are the inhabitants more distinguished for healthiness longevity, and freedom from disease than they are in Scotland.

The mountainous districts of that country were placed by Buffon at the top of a list containing those parts of Europe most noted for longevity, and Sir John Sinclair, after a careful collation of facts, wrote, that "there is no country where, in proportion to its population, a greater number reach sixty, eighty, or even ninety years of age and upwards, in full possession of all their faculties, both intellectual and mental, than in this part of Great Britain." This is the more remarkable, as the great body of the people had not, a hundred years ago, and have not now, those conveniences of life which are necessary to nurse old age; and it seems to indicate how much depends on a good climate, conjoined with active exercise and moderate living, on the natural products of the country. In all Scotland, about the year 1798, there were 37 persons who were said to be upwards of a hundred years old; and in the *Statistical Account* there were 137 others mentioned who had lived, according to good evidence, upwards of a century. In a book published eighty years ago, *Easton on Longevity*, 1712 cases are recorded of persons, in all parts of the world, who had attained the age of a hundred years and upwards between the years 1066 and 1799; and of these 170 were natives of Scotland. Two of the most remarkable were Kentigern, or St. Mungo, who founded the bishopric of Glasgow, a native of Scotland, and Peter Tortan or Yortan, born at Temesvar, in Hungary, both of whom attained the age of 185. Admitting the possibility of some mistake about Kentigern, who lived in an age when historical records were not accurately kept, it is interesting to note that in the seven centuries preceding 1799 one-tenth of all known centenarians had lived in Scotland; and it is not less important that thirty-seven such persons were then alive. These were exceptional cases, but materials exist which show that during the eighteenth century Scotland contained many old people. Tables were constructed by the Rev. Mr. Wilkie, minister of Cults, in Fife, showing the mortality of that and the adjoining parish of Kettle, and also that of Torthorwald in Dumfriesshire, from which it appeared that, in Fife, the expectation of life in infancy was 40·6 years; and in Dumfriesshire the expectation of life at five years was 54·69 years. From this it appears that a great proportion of deaths occurred in infancy. Taking thirty-six parishes noticed in the first volume of the *Statistical Account*, it appears that 40·3 was the expectation of life in infancy, which accords very closely with Mr. Wilkie's tables. Looking at the parishes in detail, it is found that, apart from diseases incidental to infancy, accidents, and epidemics, the people were healthy and long lived. From the upland parish of Cabrach, as well as from the East Lothian parish of Athelstaneford, it was reported that "the most common disease of which they die is that incurable one, old age." In Marykirk, Forfarshire, most of the people died after being "worn out by age and infirmities." In Canisbay, Caithness, "many die at an advanced age, without the recollection of a day's illness during the whole course of their lives." In Glenelg, notwithstanding its moist climate, there were sixty-three persons from the age of seventy to eighty and upwards. In the parish of Urr, Kirkcudbright, "it is not unusual to see a labourer earn his own subsistence at the age of seventy and upwards." In Kirkmichael parish, "it is not uncommon to see men pursuing their ordinary occupations at eighty or ninety years of age; and men of that age continued to be strong and active, and in the possession of every faculty." Other reports might be quoted to the same effect; but we conclude with the parish of Symington:—"There are always many aged people in this parish, and what is of more importance, they preserve their vigour and their faculties to the last. There are and have been many women past fourscore, who travel to Edinburgh with their creels, and return by midday; men of the same age are, many of them, not past labour; and there are a few persons at present living in this parish, who, though approaching ninety, are as stout and lively as some others at threescore."

During this century the length of life has increased, but not uniformly. In 1842 Dr. Charles Wilson of Kelso made a comparison between the ten years ending 1787 and the ten years ending 1839, from which it appeared that the average had considerably increased; but, of the total deaths, the proportion of persons who died under twenty years of age was greater in the second period than in the first. It does not appear, however, that the proportion of persons who live to an advanced age is increasing. In 1821 there were six persons in Glasgow who were a hundred years old or upwards. In 1851 there were 103 persons returned in the census papers as above a hundred years of age; but only 87 in 1861, and 79 in 1871. Even the total number of persons above ninety years of age sensibly decreased in the twenty years previous to 1871. Thus in 1851 there were 1950 returned as being over ninety years of age, but in 1861 they numbered 1882; and in 1871 only 1870. The greater proportion of long lives seems to be in the north. Thus in 1851 there were 319 centenarians in Britain, of whom 103 were in Scotland. These were distributed as follows:—In Buteshire, 2; Renfrew, 2; Lanark, 7; Linlithgow, 1; Edinburgh, 1; Perth, 2; Forfar, 2; Aberdeen, 9; Inverness, 26; Argyle, 4; Ross and Cromarty, 13; Sutherland, 2; Caithness, 9; Orkney and Shetland, 4; Dumfries, 1; Kirkcudbright, 2; Wigtown, 1; Ayr, 3; Stirling, 1; Roxburgh, 1; Fife, 1; Kincardine, 1; Banff, 2; Elgin, 2. As matter of fact it is found that the insular parts of Scotland are most noted for longevity, and the rural districts of the mainland are next in degree. In these districts there is a lower mortality at all ages compared with the towns. Thus, in 1871, of every 1000 females under one year of age 101 died in the rural districts of the mainland, but 167 in the towns; of 1000 from one to five years, 42 in the rural, 82 in the towns; from five to ten years, 7 in the country, 12 in the towns; from twenty to twenty-five years, 7 in the country, but 9 in the towns; from forty to forty-five years, 9 in the country, 16 in the towns; from sixty to sixty-five years, 24 in the country, and 38 in the towns. The greater salubrity of the country and rural pursuits is proved by repeated returns issued by the Registrar-General. Thus, in the ten years ending with 1867, for every 10,000 persons in each group of districts there occurred 286 deaths in the principal towns, 250 in the large towns, 217 in the small towns, but only 173 in the rural districts. For results like these anyone conversant with country life was, in a manner, prepared by personal observation. Thirty or forty years ago it was common for shoemakers, tailors, and weavers, with their wives, to spend three or four weeks in the country, helping with the harvest each year; and though their usual occupation was sedentary, and shearing corn was hard work, and the fare consisted of porridge and milk twice a-day, with bread and mild beer for dinner, they uniformly gained in health and strength. Indeed, we question if the harvest work was not much more beneficial than the more modern system of going a fortnight to the sea-side, and loitering aimlessly about the sands. The gang system which prevails in some districts is reprobated, and perhaps deservedly so; but, composed of right materials, a "gang" may have benefits both direct and indirect. Ten years ago reference was made to an industrial school in Stranraer which contained seventy-five boys from eleven to sixteen years of age, and, in addition to the trades usually taught in such establishments, agricultural labour formed an important part of the employment. For about two months in the year, but chiefly during the period of turnip thinning, the school was formed into three squads or gangs, each under the direction of a boy chosen for his steadiness and good conduct, and the whole were under the supervision of an under master. The squads were taken at the expense of the person requiring their services to the farm on which they were to work. The rate of payment for each boy was 1d. per day, which was added to the school fund. The boys took with them their blankets and pillows; and dormitories with fresh hay were fitted up for them in barns or out-houses, and they had three substantial meals a-day. They acquired so good a character for expertness in work and steadiness of conduct, that the desire to obtain their services was general, and they were not unfrequently conveyed by rail at the farmer's expense a distance of forty miles. The effect on the health of the boys was very marked, and after an absence of two months, they returned to the establishment improved both in body and mind.

From the statements already made it will be obvious that the causes which injuriously affect the peasantry have been greatly ameliorated. By means of agricultural improvements, conjoined with attention to physiological laws, such diseases as ague and small-pox have practically disappeared, and fatal epidemics of every kind are comparatively rare. Should fever break out in any district the causes are immediately investigated, and, if possible, removed. In many districts the house accommodation could hardly be better; but good houses are still the exception, as it appeared from the census of 1871 that very nearly one-third of the whole population live in houses with only one room. It remains uncertain, however, whether or not a house with several rooms is essential to either health or morality. Facts seem to point in a different direction. In a supplement to the census returns for 1861 attention was directed to the idea that houses or even cabins of one room, without a window, but with an aperture in the roof or side wall for egress of the smoke, are not necessarily unhealthy. Whatever else a cottage of that kind may want, "it has, in full perfection, that which most conduces to full health and freedom from disease, viz., free ventilation; and though not blessed with the cheering rays of the sun inside its walls, it is a room more conducive to health and vigour than thousands of the cottages with windows, where such means of free ventilation do not exist, or than those close un-aired rooms in towns, which, though blessed with windows of fair dimensions, never experience the benefit of a breath of fresh air." In 1871 it was shown that the Shetland Isles, while conspicuous over all other districts for healthiness and morality, were far the worst as regards house accommodation, as 8·35 per cent. of the people were living in huts without windows, and 90·24 in houses of only one room. While improved houses, therefore, are for many reasons desirable, it is uncertain whether that kind of house gives more breathing space to those who live in it, or whether the sexes are thereby kept more apart, than when the same class lived in one or two rooms. In the Hebrides, as well as in Shetland, the people living in poor houses are healthy, long-lived, and well-conducted. In Skye the peasantry, with few advantages, are a superior class of people. In bodily appearance they are from 5 feet 8 inches to 6 feet in height, and well-proportioned. The women are 5 feet 2 inches to 5 feet 6½ inches, handsome, with good complexions, and of active habits. The men are distinguished for patience and ability to endure fatigue. Both men and women are possessed of vivacity and penetration, strength of mind, and sprightliness of disposition. Except as regards fish they are all vegetarians; but they have warm, though far from handsome, cottages, generally with capacious outlets for the smoke. They have abundance of fresh air all around; they have also potatoes, oatmeal, milk, eggs, and fish, which supply food for themselves and oil for their lamps, and they have abundance of peat. In Islay the same healthy condition prevails. Of 69 paupers on the poor-roll of Kildalton parish in 1881 there were 33 whose ages amounted to 2576 years, giving an average of 78 years to each. There is still a great measure of uncertainty as to the causes which hasten death. In 1861 there was a great increase in the mortality of Scotland, for which no reason could be assigned; and it continued to get worse for three years, after which it abated: but the rate did not fall to its former level. The increased rate was probably due to certain laws of which we are ignorant, but which operate through secondary causes, probably atmospheric, over which man has no control, and which all sanitary precautions are powerless to avert. In that period, as in ordinary seasons, the proportion of deaths was lowest in the rural districts. For every thousand persons in the principal towns the deaths were 28·186, in the large towns 24·584, in the small towns 22·085, but in the rural districts only 17·306.

The peasantry of Scotland generally have houses which do not seem injurious to health; they have generally fresh air, a sufficient supply of wholesome and nutritious food, comfortable clothing, occupation without great exposure or oppression, and comparative freedom from depressing anxiety. Doubtless, some care and thoughtful consideration are needful, so as to make the most of the family income, and some self-restraint is necessary as regards expensive luxuries. In this direction principally we must look for the removal of any causes which affect them injuriously. Habits of industry, carefulness, and economy, should be encouraged in both men and women, and any guidance which masters or mistresses can give in this direction will bring its own reward. Facilities for investing even small amounts are now abundant, and in one way or another the aggregate of savings among the peasantry is large. The effect of this is wholly beneficial, and the habit of making little investments should be extended. Much money is thoughtlessly spent in the first years of wage earning; and it would be a great benefit to themselves, as well as to the community, if young people could be induced to think of the future. A life insurance begun in early life by a working man might be a source of great comfort, and save a world of misery. The premiums would be small, and could be so arranged as to be comparatively trifling after a family became burdensome. In case of early death, the money would be a great boon to the widow and family. One great desideratum is a thoroughly good training, religiously, morally, intellectually, and physiologically, including a practical acquaintance with such industrial arts as are useful to working men and women. As regards alleged immorality there is no cure except the building up of robust moral characters, to which any dishonourable act would be repulsive. Hours of idleness at present lead only to mischief; and some kinds of domestic industry in former days were largely mixed with good. It was not unmixed with good that the matron should have to occupy the long winter evenings in mending the family clothes, while the husband and father, with his "elshin box," containing bits of leather, a shoemaker's "last," bristles, and roset, took charge of the understandings, at the same time assisting in the preparation of school lessons for next day, and closing the evening with family worship. Nor was it without benefit that the young women were expected to spend the evenings in spinning, while the men were employed in making whips, mending broken harness, and even improving the single-soled shoes of themselves and their neighbour lasses. Instead of the old system of mutual confidence and common interest, there is now so much of the commercial spirit, that every little point is disputed, and every effort made to keep all the work strictly within working hours. A little more friendly feeling and elasticity in this system of working is desirable, and it might possibly be found in a limited introduction of the co-operative system. But one great want of the times is such a training as shall build up not only robust frames, but rich and genuine moral characters. With the increased facilities now afforded for comfortable subsistence, and with more general knowledge and observance of physiological laws, we may confidently hope for some such consummation as that anticipated by Dr. Wilson, in an essay written for the Highland and Agricultural Society of Scotland in 1842:—"When man shall be brought to acknowledge, as truth must finally constrain him to acknowledge, that it is by his own hand, through his neglect of a few obvious rules, that the seeds of disease are most lavishly sown within his frame, and diffused over communities; when he shall have required of medical science to occupy itself rather with the prevention of diseases than with their cure; when governments shall be induced to consider the preservation of a nation's health an object as important as the promotion of its commerce or the maintenance of its conquests, we may hope then to see the approach of those times when, after a life spent almost without sickness, we shall close the term of an unharassed existence by a peaceful euthanasia."

THE EFFECTS OF THE SEVERE WINTER OF 1880–81 UPON TREES AND SHRUBS.

By ROBERT HUTCHISON of Carlowrie.

[*Premium—The Medium Gold Medal.*]

THE Society having already recorded and published particulars and statistics regarding previous abnormal seasons and severe winters, it is appropriate and fitting that the series should be continued, with some details and account of the very exceptionally severe winter of 1880–81 over the various districts of the country, and of its effects upon trees and shrubs, and vegetation generally. Such a record will prove all the more interesting, as the past winter has been the third in consecutive order of really abnormal severity in Great Britain, and consequently the injuries sustained from the effects of last season's frosts have been intensified, owing to the weakened condition of vegetable vitality caused by its having been much impaired by the effects of the two previous severe winters.

We frequently boast as a nation of our advancement in scientific observation and ability to prognosticate forecasts of weather; but, as has been well said by a recent writer on the subject, if, in spite of all such vaunted science, any one were to suggest that the weather (that invariably uppermost topic of conversation of every Briton) was the work of some unaccountable, capricious, and perhaps malicious sprite, whose sole aim and bent in evil was turned to a systematic attempt to baffle all our calculations and predictions, he would truly be able to make out from the past few seasons a very plausible case for any such whimsical theory as he might advance. In Scotland, in particular, the weather is just the one theme of our daily observation which appears to baffle experience, defy statistical inquiry, and even make a mock of the most carefully constructed theory of averages. Proverbial weather-lore itself is even continually at fault, and the old saws of our childhood's nurseries are now-a-days chiefly remarkable for the utter uncertainty of their truthful fulfilments. Every attempt at induction from directly acquired experience fails more or less, and sooner or later, and very frequently when we are apt to think we have just established a strongly tenable argument based upon accurate data from a record and careful observation of a series of years. To those who have been cherishing the idea that our winters have been of recent years ameliorating, the records of the three past seasons must be very contradictory to any such theory; and the unwonted severity—prolonged beyond any ordinary record—of last winter in particular, must be very disappointing indeed to any preconceived notions of more equable temperatures in the future seasons of the British climate. It is only by extending the present area of simultaneous observation, and regarding the atmosphere as a sort of sea, whose upper surface is constantly changing, and of whose movements it is necessary to obtain a sort of conspectus, embracing at a given time the various meteorological phenomena which are emerging, that we shall ever be able to make any considerable stride in the true path of progress, which shall in time, perhaps, enable us to project our forecasts of the future with certainty. So it is, that while for the present the accurate knowledge of coming weather still remains unconquered by science, and as yet baffles all efforts at its certain prediction, much has nevertheless been done, and as the extension of our observations in space will materially help us to foretell immediate impending changes, so this extension will in time certainly correct or verify the crude uncertainties and vague conclusions of present experience.

The popularly speaking "weather wise" of the present day are perhaps the only prophets who have no honour, and deserve none, except in their own locality. Such knowledge as they possess, viewed in the light of the advanced acquirements of other departments of physical science at the present day, is little better than a sort of unconscious and instinctive experience of merely local signs; and even memory and everyday experience are apt to be most misleading guides regarding weather when unchecked by written record and a careful comparison of a wide selection of localities. Thus many people looked upon the snow-fall of 20th October 1880, which was very general over a large area of Scotland and of England, as something quite unprecedented hitherto; but yet, on reference to carefully tabulated returns prepared by Mr. Symons of the Meteorological Department, London, we learn that even in England snow has fallen in October no less than nine times during the last fifty years, while in Scotland this so-called phenomenon is even of less rare occurrence.

If, again, we are told, as we are by very accurate and reliable data collected by Mr. Plant of Birmingham, that the month of April for the past twenty years has been the *driest* month of the year, we should be inclined to doubt the veracity of such a statement without proof, yet there the recorded facts stand; and when we study further these inexorable tables, and find that September for the same period has been the wettest month of the year, we are perhaps inclined from personal recollection and our own experience to cast aside the statement as illusory and worthless, yet the fact remains; and though the information thus indubitably obtained may yet be only applicable to a limited ascertained area, it only goes to prove what we have been contending for, viz., the necessity for a wider geographical consensus of returns of meteorological observation over the globe. Such were the views proclaimed by an eminent authority recently, and having thus cursorily glanced at the position of meteorological knowledge at the present day, and endrosing this necessity for its further diffusion and extension by simultaneous observation over a far wider area than is at present embraced in its inquiry, we may now proceed to consider the subject more immediately before us, viz., the effects of the severe winter of 1880–81 upon trees and shrubs generally throughout the country, so far as the meteorological returns obtained and the individual experience of trustworthy observers in various districts enable us to do so.

No doubt the winter of 1880–81 will long be remembered as a conspicuously historic winter. Since the well-known and oft-quoted unusually severe winter of 1860–61, no season can be compared to last year's winter. As compared with that of 1860–61, it far surpassed it in point of intensity of frost, while the persistent recurrence of snow-fall also largely exceeded that of 1860–61.

Following, as last winter did, after two successive exceptionally severe winters, the damage to all vegetation may well be imagined to have exceeded that of those years, an opinion which is quite borne out by the facts as ascertained by careful inquiry in various districts, comprising all varieties of soil, situation, and circumstance.

Generally speaking, the distinctive characteristics of the winter of 1880–81 were these:—(1) The early date of its approach, and the premature snow-fall; (2) the quantity of snow which fell, and the wide geographical area of fall over Scotland and England also; (3) the intensity and continuity of the frost; (4) the unusual blocking of roads and railways in various districts; (5) the overflow of rivers and damage caused thereby; (6) many and frequent instances, only previously rarely recorded in this country, of *tree-splitting* in various districts; and (7) the unparalleled destruction to our most hardy forest trees and common shrubs in several localities and soils,'coincident with their debilitated condition induced by the two previous severe winters.

Proceeding to notice these several distinct features of the winter of 1880–81, we turn first to the premature period of the commencement of winter. To the surprise of every one, snow fell and winter may be said to have commenced generally on 20th October 1880. As far south even as Windsor the fall was sudden and heavy. Rain had fallen generally the previous day, and an easterly wind prevailing and the barometer falling, the atmosphere became intensely cold all over the south of England generally. The trees in foliage at Slough, Maidenhead, Richmond, Twickenham, and as far as to the south-west coast (most trees being still full in leaf), were borne down by the weight of the snow, and in many market gardens about the valley of the

Thames and southern coast the crops were completely hidden. The snow-storm inflicted a great amount of damage on the trees in Windsor Great Park, boughs and branches being broken down in many parts of the royal demesne by the superincumbent mass of snow collected on them. At intervals a sharp crack would mark the giving way of some sturdy limb, in many instances 20 feet long, and leaving a wound on the trunk of about 18 inches in diameter. In other places, in Surrey and adjacent counties, we learn that the same thing was observed, and that the destruction to large old trees by the snow was greater than any living inhabitant in the districts can recollect. The oaks in all situations seem to have suffered most, being in full leaf, and heavily cropped with acorns. Next to them are the elms, some of which in various localities, as at Titasey Place (Godstone, Surrey), Ancote, Weybridge, Charterhouse, Godalming, &c., were stripped from top to stem. The beech also suffered, but in a less degree; while the lime, chestnut, and sycamore, although bent to the ground, almost entirely escaped. In these districts a similar fall of snow suddenly took place on 24th October 1859, when the trees were in full leaf, but nothing like the same amount of damage was then done. The thermometer at these points indicated last year (October 20, 1880) 7° of frost, and there had fallen from 6 to 8 inches of snow.

In other districts further north similar experiences were met with. Standard rose trees were very much cut up, and other evergreen shrubs showed symptoms of their having been affected by the unusually early winter's approach, the Ailanthus in many places being killed, and even the hardy birch having been deprived of its boughs, which were torn off as if by a gale. The cracking of branches of hard-wood trees, as they parted from the trunks in wooded districts, could be heard in all directions, so that one did not till then realise how nature has fashioned her evergreens as not to be so liable to injury from this cause.

The heaviness and unusual earliness of the snow-storm of 1880 (October 19th and 20th) render it interesting to compare the date of it with that of the first snow-fall of former years to find a parallel; and going carefully over a period of forty-eight years —from 1806 to 1830, the statistics being taken from those of Luke Howard in his *Climate of London*; and from 1858 to 1880, the statistics being those of so eminent an authority as Mr. G. J. Symons—we find that there is only one instance of an earlier snow-fall of any note than that of last year, and that was in 1829, when, on 7th October, there was a considerable fall between 1 and 3 P.M. The fall of October 21 and 22, 1819, appears to have, however, somewhat resembled that of 1880; but during the twenty-three years 1858–80 no instance occurs at all so remarkable as that of October 1880.

The mean date of the earliest snow-fall for twenty-five years from 1806–30 is found to be December 1; while the mean date of the earliest snow-fall for twenty-three years, 1858–80, is November 24.

So much for the premature setting in of the winter of 1880–81, which was very general all over the country, and in Scotland also, where, although we have not given any recorded temperatures, the thermometer had fallen several degrees below the freezing point, and indicated in some cases 10° to 15° of frost in low-lying situations and near river-beds, and in such localities the unripened state of the sickly young wood of forest trees, weakly and sparse in growth owing to the debilitated constitution of the trees, having suffered from the acute cold of the two previous winters immediately preceding, rendered them an easy prey in their unripened condition to so early and so sharp a frost. With such an injury to their ripening twigs in such soils and situations particularly, but indeed in all sites, it can hardly be wondered if forest trees and shrubs were so checked in their ripening and maturing their young buds for next year's growth, as to be left an easy prey to the succeeding recurrences of extremely low temperatures for which this winter has proved so remarkable. Frost, alternating with an occasional thaw for a brief period, and stormy weather, prevailed till the close of the year 1880, and in January 1881 began what may be fairly regarded as the most trying and disastrous period of the whole winter, to all descriptions of vegetation throughout Scotland, and especially to coniferæ and evergreen shrubs of all descriptions.

Although the two previous severe winters had done much damage, which has been duly and carefully recorded, the area over which their ravages extended was much more limited, and the extent of the injury done was also considerably less even in these areas. In this respect the winter of 1880–81 was notably conspicuous, and can only find a parallel in the season of 1860–61, which in general features most nearly contrasts with it, although in point of persistency of low temperature the winter of 1860–61 will be found far less remarkable than that of last year. In the memorable winter of 1860–61, the night of Christmas 1860 was the fatal night of that year, and to the severity of that evening must be attributed most of the injury done to trees and shrubs in that season. In winter 1880–81, however, no one particular night can be saddled with the injury and loss sustained in shrubbery and plantation in any district, for as we shall show by the following tabulated statistics, it was owing to *consecutive* low readings of the thermometer in certain situations that the greatest damage was sustained. Thus, for example, we find that during the month of January 1881, at the

Clovenford's Vineyards, Mid-Lothian, the following were the registered readings:—

	Degrees of frost.		Degrees of frost.
January 4,	10	January 14,	24
„ 5,	14	„ 15,	(zero) 32
„ 6,	10	„ 16,	(10° below zero) 42
„ 7,	14	„ 17,	(2° below zero) 34
„ 8,	13	„ 18,	12
„ 9,	21	„ 19,	22
„ 10,	14	„ 20,	22
„ 11,	18	„ 21,	29
„ 12,	20	„ 22,	12
„ 13,	22	„ 23,	(4° below zero) 36

Hence we find that at this station, where three thermometers are in use to check each other, there were recorded during these three weeks of January 1881 no less than 421° of frost, while, during that period, the thermometer fell on four occasions, to zero, and below it. The site is, of course, low lying and near the influence of the river-bed. Similar records are given from other localities in Scotland for the same period, and under equivalent conditions of situation, and which correspond in the main, as regards their results, with the low readings of temperature given. Such situations were chiefly in Berwickshire, East Lothian, and along the valley of the Almond in West Lothian, and in several localities in these districts the registered temperature during this period was found to be considerably lower than those just given, indeed the point to which, in some localities, the mercury fell, seems almost incredible, but is nevertheless true. For example, at Blackadder, in the east of Berwickshire, at an altitude of about 150 feet above sea-level, an exposed thermometer registered as low as 24° below zero on 16th January 1881. In the same locality, near the level of the Whitadder, as low as 28° below zero is recorded, and old oak trees of 200 years growth, and of fourteen feet and upwards in girth, growing at Blackadder, are killed outright. These trees had for the previous two years been evincing symptoms of suffering from the winter's severity—the young growths of wood having been killed back during 1879-80, and the foliage during the previous summer having been very scanty,—leaves only being developed singly and on the terminal shoots; and these leaves being frequently as large as a full grown man's hand. The soil in this situation is an open light soil upon clay and till, and the exposure quite open to the prevailing north and north-eastern gales off the coast, which are generally very destructive to vegetation in winter, and during the later spring months of March and April. In this district greater injury has been developed during April and May than had been anticipated, and reference will be made to the frost effects in this district after being fully ascertained in a later paragraph of this report, when individual localities come to be reviewed *seriatim*.

In other districts of Scotland, the month of January 1881 proved also to be the coldest, and from almost all quarters the cold is reported as having been experienced most intensely, and the lowest registrations show that, generally speaking, the week from 13th to 20th January was the most severe. Many records point to the night of 14th January as having been the coldest of the period; and to the intense severity of the frost on that occasion, most of the injury to trees and shrubs in all soils and situations is to be attributed throughout the country. In consequence of the timeous snow-fall, the smaller shrubs and plants under its sheltering cover suffered less, but the extreme hard frost of that week utterly killed many shrubs commonly looked upon as perfectly hardy. As an instance of the intensity of the cold of this week, the case of the inland or central districts of Scotland remote from sea influence may be cited. In the Carse of Stirling, Carse of Gowrie, and such straths, upon heavy clay loam, nearly all evergreens perished down to the snow line. Common and Portugal laurels, Laurustinus, Aucuba, Holly, *Pernettya mucronata*, privet, whin, and even common *Rhododendron ponticum* were killed to the ground; and common ivy suffered severely, several of the ornamental varieties, such as *H. Raëgneriana*, *H. macrophylla* and *Hedera Algeriense*, were killed in southern exposures upon walls. In the Crieff districts, the Earn was one vast sheet of ice from St. Fillans to Bridge of Earn,—a distance of fully thirty miles,—a circumstance which had not occurred since the memorable frost of 1837-38; the intensity of the cold may be inferred from the following thermometer readings taken at 9 a.m. during the five most severe days:—

1881.	In the shade.	Exposed.	3 ft. under ground.
January 14,	+ 7°	4°	+27°
„ 15,	+16°	7°	26°
„ 16,	+12°	4°	24°
„ 17,	+ 6°	zero	22°
„ 18,	+ 8°	4°	26°

In Peeblesshire, the frost also at the same date reached its greatest intensity, 47° of frost were registered on the night of the 14th. In the severe winter of 1860-61, at the same locality and under same circumstances, this thermometer recorded 44° of frost, and that season was generally considered to be the most severe which had been experienced in the district for the previous forty years. In Fife, and other counties, similar records are made, and in those districts where local manufactures were dependent upon water power of the rivers, such as the Earn, Tweed, Tay and tributaries, much loss and inconvenience was felt by the mills being rendered idle, owing to the water-wheels being blocked with ice. In the southern districts of Scotland, as in Dumfriesshire, &c., and the districts of Lower Nithsdale, which had hitherto enjoyed an immunity from the severity of the weather which other localities had experienced, the temperature of January became much colder, and the frost attained its maximum of severity; still these counties suffered less, and in them the destruction of trees and shrubs is not nearly so great or calamitous as in most of the other districts of Scotland. Evergreens have been scorched, and had their foliage and young wood of one or two season's growth killed back, but no such serious and general devastation amongst trees and shrubs in policy grounds and plantations has been reported as in the counties more to the north and north-east of Scotland.

Altogether the month of January, 1881, was unquestionably over all Scotland, with the exception of a bit of Caithness, Sutherland, and the northern part of the Hebrides (according to Mr. Buchan of the Scottish Meteorological Society), the coldest month, on the mean of the month, of which we have any record. "This great cold," he adds, "was confined to the period from the 5th to the 29th. The year opened with a temperature four to seven degrees above the average. During the week from the 7th to the 13th January, however, very low temperatures ruled, the mean of that week being 10° below the average of those days. The following week, 14th to 20th, showed 14°·30 below the average of those days. The week following, again, showed 12°·30 below the average of that week. So that there were three weeks, 7th to 27th January, in which the temperature was 12°·20 below the average of that part of the year. There had been colder individual nights than those of last January, but such a prolonged period of intense cold he could not go back upon." During the first week of February there came a period of warmth, about the average. The next week, 11th to 16th, was about 5° below the average. From 19th February to 6th March was considerably below the average, the first three days of March being 11° and upwards; then there came a warm period from 8th to 19th March, when the temperature varied from 1° to 11° above the average. Again from 20th March to 11th April, the temperature was very much below the average of the season, reaching, on one occasion (22nd March) over 13° under the average. Having thus cursorily sketched the main features of the winter of 1880-81, in those points which mainly affect vegetation generally, we need not in this Report refer to the details of the frequent blocking of roads and railways in the more northern districts, as well as in many parts of England, to the embedding of whole trains with their living freight for entire days and nights together in some of the Highland districts, or to the serious nature of the weather to the sheep farmers in every hill or pastoral district in Scotland, nor to the frequent instances of severe damage to bridges, river-embankments and works caused by the huge masses of floating block-ice, and floods released from their winter spell by the sudden thaw and break up of the storm,—all of which combine to render the winter of 1880-81 so memorable. But we shall pass on to notice in more detail, reports from various localities in Scotland, of the nature and extent of the destruction caused to trees and shrubs there in individual cases. At Blairdrummond, Perthshire, much damage was done to all trees and shrubs. Amongst hard-wood forest trees, oaks, elms, and limes of large size, and probably from 100 to 150 years old, were heard to crack in their stems, during the severe frost, with a report like that of a pistol, and were left split in their trunks for several feet in length. In shrubs, holly and bay laurels suffered most severely, the former having lost all their foliage, and been killed back in the branches almost to the main stem, while the latter are killed to the ground. During May, the hollies began to push out young buds from the main stem and along the larger branches. Amongst coniferæ, the *Araucaria imbricata* were in some cases killed, and all were severely scorched, and lost the tips of their side branches; *Wellingtonia gigantea* was very much browned on the sides most exposed to the prevailing wind, and lost a good deal of the young wood of last two years' growth; and *Taxodium sempervirens* suffered in a similar manner, but much more severely. The altitude of this site is 50 ft.; the soil, sand and gravel, and subsoil clay; and the lowest recorded reading of the thermometer during the storm was 2° below zero, on 17th January 1881. In the richly wooded district of Murthly (Perthshire) great havoc was sustained by the plantations from the great depth of snow which fell, and which during the storm and till end of March, amounted to 5½ feet, and the lowest temperature at 4 feet above ground was + 4°, at an altitude of 85 feet above the bed of the Tay. The heavy weight of snow broke many fine specimen pines, notwithstanding the attention bestowed upon them in shaking it off from the branches. Large limbs and branches were torn out of their sockets, and a number of fine trees of *Cedrus libani*, and *C. Deodara*, *Abies Douglasii*, as well as hard-wooded trees of oak, elm, and beech, have been permanently disfigured in this way. *Araucaria imbricata* has been in some cases frosted down to the ground, like geraniums. Doubtless the severe hoar frost in so low a site would materially contribute to such destruction. *Wellingtonia gigantea* suffered very severely from the same cause, and in damp low situations has succumbed entirely. Newly planted common hardy trees, not having got established in the soil, were severely frost-bitten, and lost the tips of branches. The other and smaller plants of some of the newer coniferæ seem to have escaped, being covered by snow. From other parts of Perthshire, and northern counties, similar reports are made, and all repeat the same sad tale in almost similar terms. In the higher altitudes and situations in Perthshire, the previous summer having been exceedingly favourable to the woods and plantations, the season's growths were early and vigorous, especially of the larch and spruce, the young shoots for the season having in many instances attained a length of from 18 to 36 inches in the young plantations, while that of the Scots fir averaged from 6 to 12 inches in length, consequently in such sites, the young wood being vigorous and well matured, these trees suffered less than in other localities. But rhododendrons, bays, laurels, aucubas, privet, and other shrubs, not excepting the common whin and broom, experienced a very different fate, the last two or three years' young wood having been quite killed, as well as the flower-buds all over the plant in every instance, while as regards the whin and broom, both have been completely killed down to the very ground in all districts in the north and central counties of Scotland. In the same quarters, the damage done to ornamental and park trees was equally serious. The heavy weight of snow upon them, and the strong wind which blew in January on several days, broke down many limbs and branches, and permanently disfigured many a handsome specimen, several being cleft down the centre. Young plantations of Scots fir in Aberdeenshire were severely damaged by the snow in a similar manner.

Owing to the long continuance of the snow lying to a considerable depth, the destruction to trees of large size, and of all varieties, and also to hedges, by the ravages of starving rabbits, has been very great. No description appears to have been exempted in their emergency. Standard ash, elm, sycamore, laburnum, holly, and many of the young coniferæ, fell a prey to their ravages; and even in grounds where these pests were considered to be well killed down, and almost extirpated, the damage was sufficiently conspicuous to show what a stray or single starving rabbit can do, and as each successive drift or snow-fall enabled the marauders to reach higher up the tree, many young plantations had their crop peeled to the very tops of the branches, and hedgerows and large trees presented an almost ludicrous appearance when the snow had disappeared, and seemed as if they had been attacked by some species of flying or winged rodent.

In Peeblesshire, and also in Forfarshire, reports reach us of young larch twigs having been frost-bitten. Their appearance in May indicated that the trees had been growing during the previous season with considerable vigour, but had been unable thoroughly to ripen their annual growth, and thus, being more susceptible to injury, the severe frost, accompanied by bitter storms of wind, did vast injury to whole tracts of thriving plantations.

At Rescobie (Forfarshire), the severe winter proved very fatal to both animal and vegetable life. Many of the common water coots were observed to have died, and it was both curious and interesting in the following month of May, after the storm had gone, to see how much quarrelling and pugnacity prevailed amongst the survivors of the male sex. Could it be that the females, probably being less hardy than the males, had chiefly succumbed to the intense cold? In the neighbourhood of Scone, it was observed that while the common sorts of rhododendron had suffered, such as *Rhododendron ponticum* and *R. ferrugineum*, and others, generally looked upon as quite hardy, the hybrid varieties were comparatively little injured.

At Carlowrie (Linlithgowshire), 92 feet altitude, and all along the district adjacent to the River Almond, from the Bathgate hills to the river mouth at Cramond, all trees and shrubs suffered very severely, and much more damage was done than in any previous winter, not excepting that of 1860–61; the soil being a deep heavy loam upon a damp subsoil, inclining to clay in most places, and the near proximity to the river contributed to the injury here experienced. The records of low temperature were very extreme, and lower than during the winter of 1860–61. The previous two winters had been very severe in their effects upon all vegetation, and the already debilitated state of many trees and shrubs rendered them an easier prey to the ravages of the frost of last winter. The following is the record of the severest period of the storm at Carlowrie during January 1881, taken accurately at 2 feet above ground in an open and exposed situation:—

January 13, = + 5°
" 14, = + 2°
" 15, = + 4°
" 16, = + 2°
" 17, = − 8°
" 18, = +13°
" 19, = +17°
" 20, = +11°

January 21, = +10°
" 22, = +14°
" 23, = +20°
" 24, = − 7°
" 25, = +10°
" 26, = − 4°
" 27, = − 3°
" 28, = +29°

For several nights, from the 28th January to 6th February, the thermometer stood about the freezing point, with little variation. On 6th February it fell to + 20°, and on 7th to + 18°, when heavy snow fell, and the mercury rose to + 32° till the 11th February, when 7° of frost were again registered, and another heavy snow-fall took place.

It will thus be seen that in this low site the severest nights were those of January 16, 23, 26, and 27, when the mercury fell below zero. The lowest reading was on the 16th, when it was 8° below zero, or 40° of frost.

Low as these registers may appear, they were eclipsed by those of the Berwickshire district, as will be presently seen. Two very remarkable instances of tree-splitting occurred at Carlowrie during the night of 16th January. These were old sycamore trees, probably from 250 to 300 years of age, and girthed respectively 10 feet 9 inches and 11 feet 2 inches, at 5 feet from the ground. The rent, which was upon the north-east side of the trunk in both cases, extended to about six feet in length, and took place in each case about eight feet above the ground. The gaps were so large that the blade of a large garden knife could easily be inserted into them up to the hilt. The trees continued in this condition till about the time of foliation in April, when the wounds closed. During the interval, however, the sap exuded freely during both January, February, and March, and the periodicity of the monthly flow or rise of the sap during those "dead" (?) months was well defined, and measurements of its quantity were taken from time to time. The quantity exuded at the period of the greatest monthly flow was something quite startling, and occurred at the same age of the moon in each month, viz.:—three days after full moon. The graduated tubes which were used to measure the flow were quite inadequate for the purpose at that particular time, and the sap, which seemed to ferment on exposure to the air, stood around the tree root in pools. The loss of so much vital property to the trees must prove very injurious, doubtless, in the future, and their condition will be watched during the succeeding seasons with interest.

In this situation the following have been killed outright by the severity of the winter of 1880–81, viz.:—*Araucaria imbricata*, *Cedrus Deodara* (30 feet high), common and Portugal laurels, all varieties of holly (including variegated), *Arbutus Unedo*, *Cupressus macrocarpa*, *C. Goveniana*, *Cryptomeria elegans*, and *C. japonica*, *Pinus insignis*, *Taxodium sempervirens*, double-flowering scarlet thorns, *Garrya elliptica*, *Euonymus floribunda*, and many varieties of ivy, and every *Aucuba japonica*, both sheltered and exposed.

Amongst trees and shrubs severely cut up and injured by the winter in this site are the following:—*Wellingtonia gigantea* (30 feet high), *Wellingtonia gigantea variegata* (8 feet), *Hedera raëgneriana*, *Pinus Douglasii* (40 feet), *P. ponderosa*, *Picea balsamea*, *P. pinsapo*, *P. cephalonica*, *Abies Menziesii*, common Irish yew, walnut trees (40 feet high) have lost three years' young wood, *Cedrus atlantica*, *Thuja Lobbii*, and common guelder rose (30 feet high). In the list of slightly injured plants are *Abies Albertiana*, *Picea grandis*, *Cupressus Lawsoniana*, *Pinus maritima*, common lime trees, and horse chestnut, which have lost the tips of young branches, and laburnums, which are showing much dead young wood.

In the neighbourhood of Bonnington, Trinity, and outskirts of Edinburgh, near the sea, and fully exposed to the north-eastern winds which prevailed, the winter's results were very disastrous on most species of plants grown there. From tall evergreen oaks down to herbaceous plants, the effects of the frost have told very severely on all vegetation. Hollies of all varieties (gold and silver) have lost all their foliage and young wood. Common yews have likewise suffered, and in some cases its wood of a year old has perished. Privet is quite stripped of all foliage, and many plants of it killed outright. *Garrya elliptica* was one mass of dead leaves and shrivelled catkins. *Aucuba japonica* had all its young wood quite killed back. Common ivy suffered severely in its last year's shoots and in foliage. *Arbutus Unedo* was killed. *Cedrus Deodara* lost all its last year's growth and foliage, and was much injured in the terminal shoots. *Rosmarinus officinalis*, *Lavandula spica* (3 feet high), were killed, and fully 50 per cent. of wall-flower plants coming into bloom were killed.

At Tyninghame (East Lothian), close to the sea, the thermometer registered 7° below zero, and there much damage has been sustained. A fine large tree of *Arbutus unedo* was actually split down the trunk and killed. Many fine *Laurustinus* bushes, 20 feet in height, and large hollies 44 feet in height, and girthing about five feet at the base, also perished; *Wisteria sinensis* on the wall, and *Corchorus japonica* succumbed; *Araucaria imbricata* and *Wellingtonia gigantea* were very severely scorched, and had young wood killed. At the neighbouring property of Whittinghame, much injury was also inflicted. There, *Garrya elliptica* was very severely nipped, rhododendrons of all sorts severely browned, laurels and bays cut down to the ground, common dog-wood lost a year's growth, and *Araucaria imbricata* severely scorched on the exposed side. Singular to relate, a large tree of *Eucalyptus viminalis*, 53 feet in height, and 8 feet 4 inches in girth at a foot from the ground, after which it breaks into four large limbs, escaped uninjured. It stands in a sheltered position, surrounded by other coniferæ and hard-wooded trees, and about 150 feet above sea-level, and the thermometer here indicated 3° below zero on several nights in January 1881. Probably owing to its shelter by other trees from the cold winds, this Australian blue-gum escaped, for it was cut over by the frost of 1860–61 to 6 or 8 feet from the ground, and from the stool then left, the present tree has sprung to its present dimensions. This fact goes to confirm the opinion we have often expressed that it is not so much the intense amount of frost in this climate, to which this and other denizens of steadier climates succumb, as it is to their exposure to heavy "rime" or hoar frost and frosty winds in exposed situations, blighting their young buds and wood. At Castle-Craig (Peeblesshire), at 850 feet altitude, hollies were in some cases killed to the ground, fern-leaved beech tree much injured in its buds, and common silver firs had the tips of their young branches scorched as if by fire. Bays and Portugal laurels, and *Aucuba japonica* were also killed to the ground.

At Blackadder (Berwickshire) and near the influence of the river mists, much destruction was experienced by all hardy shrubs, trees, and herbaceous plants. A fine old holly 45 feet high, and girthing 9 feet 4 inches at 3 feet from the ground, was killed outright. This locality, as well as all that district, and also the vicinity of the Whitadder and Tweed, in the same county, had been seriously affected by the two previous hard and unusual winters, and the damage done in 1880–81 is thus far greater, the trees and shrubs being so much weakened, and unprepared to stand a third and more severe season. Two miles further north, at Chirnside, in the east of Berwickshire (350 feet alt.), Dr. C. Stuart, whose accuracy and observation of the phenomena of nature are well known beyond his own neighbourhood, informs us "that the thermometer in his district never fell below zero, although at Blackadder, already referred to (150 feet alt.), only two miles off, an exposed thermometer registered as low as 24° below zero, and that every shrub, conifer, and ornamental tree was killed there; 198 fruit-trees, either dead or fatally damaged, have been dug up in the garden. Among hardy trees in the east of Berwickshire, many old oaks of 200 years' growth are killed outright, having gradually pined away during the three successive unusually cold winters, their back-going condition having become gradually more apparent each year. All the ancient hollies in the woods, in a radius of six or eight miles, are dead, especially where exposed to the frost "rime" near the river. Beautiful specimens of the rarer coniferæ, planted with great judgment and taste, are either killed outright or fatally damaged; while the fine old ivy that festooned many of the older trees is lifeless."

Writing further regarding the effects of the winter 1880–81, on trees and shrubs throughout the east of Berwickshire, Dr. Stuart says:—"Now (May 1881) that the country is beginning to assume the appearance of spring, the blasted appearance of the woods must strike every observer. The Scotch firs, spruces, and silver firs are browned, especially on the sides exposed to the weather, to an extent never remembered by the oldest men; and what with the withered vegetation on the hedge-banks, the complete destruction of the hardy whin, and, until within the last few days, the absence of all green to relieve the eye, the country presents a sombre aspect, quite unusual at this season. Except in sheltered nooks, the common primrose is not generally in flower, and the kings-cups are only just opening. In low-lying situations, where the temperature was many degrees below zero, the oaks are killed outright. For three years in succession, it has been observed that large limbs of these trees were in a dead condition. But it was only last year that a few watery shoots with enlarged leaves, showed to what an extent some of them had been damaged. The past winter seems to have finished many of these. Last week, I visited a place on the Teviot, where the temperature closely resembled our low readings of the thermometer in Berwickshire. Several of the oaks were completely dead; a few whip-like shoots from the trunk constituted all the growth made last year. These shoots are now entirely killed by last winter's frost. Great sheets of bark, completely decayed, were falling from one of these trees on the lawn, plainly indicating that the tree was entirely dead. Two very old Spanish chestnuts were also killed, and all the tenderer shrubs, fruit-trees, and conifers. Many years must elapse before the effects of the weather on vegetation for the last three seasons can be rectified. Owing to the wetness of the first of these years, the woods never ripened. In consequence, it was ill prepared to endure the extreme temperatures it was subjected to. When the frost was most severe, the trees were heard to rend in their trunks and branches from the expansion of the moisture they contained. This was heard both in Northumberland and Berwickshire, by credible witnesses, who can point out the trees, principally limes and elms. These persons describe the sounds heard as most peculiar—something like a sharp report. A very painful lesson has been given to all persons engaged in beautifying their policies with the tenderer shrubs, who will, I should suppose, be very chary in future in planting any but the hardiest varieties, especially in low situations, with the prospect of other Arctic winters."

While such a tale of destruction has to be told in regard to many old and favourite hardy evergreens, such as bays, laurels, and aucubas, it is proper to mention that one species of the common bay, viz., the Caucasian variety, has withstood the late severe winters far better, and is in some situations perfectly unaffected. This variety, which is darker in the foliage, is of a bolder type, and more round-shaped blunt leaf, should be better known, and more generally planted than the common variety. The *Colchicum* variety appears also to be hardier than the old common sort. It again is of a paler green hue, and with a much narrower and more pointed leaf, which gives it perhaps a more handsome appearance, but it is not so hardy as the Caucasian variety, which, as we have stated, did not suffer at all in many situations.

But while the destruction to woods and policies in Scotland, recorded in the preceding pages, has been very severe, the effects of the winter's severity were by no means of such a local nature as to apply to Scotland only. Reports from all parts of England might be given, in which the story is still the same, and these records extend as far south as to Plymouth and Cornwall. Countless instances of severe losses might be rehearsed, but it would only be a repetition of words to narrate them; in some places in the south, they appear to have suffered even more severely than in Scotland; instances of tree-splitting in England and Wales are numerous, and everywhere the records of the winter's disasters to trees and shrubs is really to every true arboriculturist most disheartening. Nor is it only to the direct effects of the severe frost that trees and shrubs owe their destruction. Many indirect influences contributed to the universal calamity. For example, in many cases the insectivorous insects, being deprived of their natural prey, naturally took to bark the wood of many species of trees and shrubs, and have injured many acres in this way. To this source of injury it is perhaps somewhat difficult to trace direct evidence, but, doubtless, many sycamores, elms, limes, birch, and Scots fir suffered last spring most severely from the ravages of insects in their young buds, which in many localities are reported to have been eaten out by the nibbling of starving insects.

The foregoing facts supply the intelligent arborist with many an instructive and interesting caution and advice. That the injury done during the past winter of 1880–81 has been unparalled, there can be no doubt. The details we have given convey but a mere fraction of the accounts of the immense destruction our woods and plantations have sustained by the frosts of last winter, but they will suffice to show the imperative necessity of planters avoiding planting those species of trees and shrubs which are known to be, in the slightest degree, doubtful of success in this country. Rude as the shock may be, its lessons may be salutary, and while we regret the loss of many fine promising specimens of trees and shrubs of recent introduction, may such losses only brace up the enterprise of the proprietors and planters of Scotland to select more carefully in future the species most adapted even for very unusual winters, and to plant more carefully in future, only in suitable soils, altitudes, and exposures, any species of which there has been raised any doubt as to hardihood. Much may be yet achieved towards acclimatising and rendering perfectly hardy in our climate many of the most beautiful coniferæ and shrubs, still looked on (and naturally so), as doubtfully hardy, by the proper selection of sites for planting, by the judicious preparation of the soil in the site at first, and by the proper choice of species or variety to plant, so that with careful management in these particulars, our newer introductions may have the best possible chance of resisting with impunity (which many no doubt inherently possess) the extreme severity of such a memorable winter as that of 1880-81.

THE RECLAMATION OF MOSS LAND ON THE FARM OF BYERS.

By JAMES SHIELDS, Byers, Bathgate.

[*Premium—Ten Sovereigns.*]

THE writer of this report is tenant of the Farm of Byers, Bathgate, Linlithgowshire, and reclaimer of 20 acres of waste moss land, part of which he now cultivates along with the rest of the farm, which is arable. The 20 acres referred to are situated 15 miles west of Edinburgh, adjoining the main road from Edinburgh to Glasgow *via* Bathgate, and have an elevation of about 600 feet above the level of the sea. The land is very level, and consequently has no particular exposure. It is situated exactly on the water-shed, three-fourths of it draining to the west, and helping to swell the waters of the Avon, the remainder of it flowing east, and finding its way to the sea *via* the Almond Water. The moss is of great depth, and it was only at the east boundary where a four feet drain touched a blue sandy clay subsoil. The greater part was covered with heather, with here and there patches of bent and other coarse grasses. The value was almost nil, except for "cover" for the sportsman, and an occasional run over with cross hoggs during a hard winter, the value of which was invariably nullified by the loss of one or more of the hoggs drowned in the moss ditches after a sudden thaw. The moss, 'tis true, was of sufficient density to make peat fuel, and 30 or 40 years ago the peat stack was a necessary part of the winter's provender; but since the advance in labour and the development of the coal mines in the immediate neighbourhood, the practice has fallen into disuse.

The chief obstacle in the reclamation was the drainage,—the burn by which the natural drainage of the moss land and the fields of slightly rising ground immediately to the north was carried off, was only about 2½ feet deep, and on passing the edge of the moss turned at right angles across the parish road, by a stone-built bridge, the heavy found stones of which gave the level obtainable, and the rise of the burn for 250 yards above this was very trifling.

For the purpose of draining the valuable land above the moss, the proprietor granted a sum of £20 to bring up a level through the adjoining farm and under the parish road, and which I had done in 1863 by commencing about 200 yards down the burn. The main with a 12-inch tile entered the moss with a 7-foot level, which has continued to do good service ever since. The cost of cutting this main was 12s. 6d. per chain. It was not, however, till 1872 that the reclamation of the moss proper was commenced. The Kirkton estate (of which the moss in question forms a part), having been purchased by the late Dr. Cowan of Linburn and Boghall, he being desirous of improving the property, on being asked to advance money for reclamation of moss land, at once agreed to give £300, if required, at 5 per cent., for draining, delving, and soiling the moss with ashes, spent shale or other débris of coal and oil works, which had been working for a number of years, and was only about 200 yards distant from the moss. This soiling was to include horse hire and all expenses connected with the improvements. I accepted the offer, and in the spring of 1872 commenced draining and driving of soil and débris on to the moss as opportunity offered. The draining, one would naturally think, would now be an easy matter, having the main ready; but to extend this main 6 feet deep with an 8-inch tile right through the centre of the moss, reducing the tile to 6 and 5 inches as the heavier sub-mains were provided for, was no easy matter. The moss was like a sponge lying full of water, and it was sometimes impossible to get even two lengths of tile down at a time for the bursting in of the moss, and when a burst did occur the extra width that had to be thrown out caused a heavy downward pressure on the sides of the drain, which had the effect of bursting up the tiles unless immediately covered with sods and the weight of moss on top. Even after the mains were in, the water was so heavy that the small drains had to be opened, on a 5 acre break, by taking off two spadings and allowing them to stand in this state during the entire summer of 1872 —a summer ever memorable in the annals of agricultural history as the first of a series of sunless and wet seasons which have been experienced during the last decade. The tiles were all carried on by the men or women, with light hand-barrows made for the purpose, at odd times, when the other lands of the farm were not in condition for working. In the autumn, when the drains were opened to the required depth, the two spadings in the opened drains showed a depth of only about 12 inches. All the small drains were put in 4 feet deep, 6 yards apart, a few of them with 2-inch tiles and collar, which did not prove satisfactory; the others, 3 inches, all on wooden soles of beech, about 3 inches broad by ⅜ thick; the beech was got on the estate gratis, the cost to drainage account being only the sawing. During 1873 and 1874 the surface of the moss having become considerably consolidated, advantage was taken of winter frosts and summer droughts to cart on soil, ashes, &c., till the whole of this 5 acre break was covered with, on an average, about 160 carts per acre,—part of it delved at a cost of £4 per acre, and part ploughed by keeping both horses on the "land;" and notwithstanding the utmost care, "bogging" was by no means an unusual occurrence. During the winter of 1874 and 1875 the whole was manured with police manure—about 30 tons per acre. The delved and ploughed portion, about 2½ acres, was in May 1875 harrowed, drilled, and planted with Dalmahoy potatoes. The old turf was thoroughly decomposed, having been exposed to the action of the weather for nearly two years. The other half of the break was lying in its natural state, as far as tillage was concerned, but all covered with soil, ashes, and manure. The draining had killed the heather to a great extent, and the soiling had so rotted the old surface turf, that I resolved, not without some hesitation, to plant the whole with regent potatoes, and ploughed them in every third furrow, the finishings, when too narrow for one horse to walk on, was turned over with the spade, covering the last drill or drills of potatoes. The ploughed-in portion was well harrowed with one horse and a single harrow (there being less risk with the single horse in the event of bogging); all the torn up sods were put grass down by the women, and thereafter rolled, which was the last of the horse work for the season. As a whole, it was rather a rough-looking job, and some of my friends complimented me by saying, that cheap as potatoes were that spring, I was certainly driving mine to a bad market, by burying them in the moss. However, they came up between the sods with surprising regularity, and although not quite as straight as a line when brairding, they had such vigour of growth that it was difficult when nearing maturity to say in what line they had been planted. The results exceeded my most sanguine expectations, the whole break averaging £27 per imp. acre. The artificial manure used was 6 cwt. potato manure (Poynters, Glasgow), and 2 cwt. kainit salt, costing 53s. per acre.

Immediately on the potatoes being lifted the whole was ploughed across the line of drills, and though tolerably dry some parts of the moss were very soft, and would not carry the horses; and as the tying of old bags on the horse's feet was both a troublesome and expensive process, I got two sets of wooden clogs 11 inches square made in two parts to fit round the horse's hoof. The under part was held together by cross iron straps, ⅞ broad by ¼ inch thick, slightly bent down,—the bend being deeper in the front than in the back, in order to allow the wood to come up a little on the hoof, and so prevent the clog from coming off; this strap was stapled to the under part of the wood, with play enough to allow the divisions of wood to open out for putting the horse's foot down on the strap, which was so curved as to allow the heels and toe of the shoe to pass through, the web of shoe thus resting in four places on the under fastening or strap; the top of the clog was held together by hasp and staple, and short wooden pin. After getting these clogs I had no trouble in ploughing or even carting on the moss, the horses had perfect confidence in crossing the softest of it; and even with one clog on hind foot, it made a wonderful difference.

In 1876, I drilled the whole of this break again, and planted it with potatoes, giving it about £4 per acre of artificial manure. The crop was not so good as the previous year, but on being sold in the following spring for seed at £5 to £5, 10s. per ton realised about £19 per imp. acre. During the winter of 1876 and 1877 the whole break was topdressed with lime compound, having on an average about 10 bolls of lime, equal to 30s. per acre. On the 20th of June 1877, after being well harrowed, it was sown down without a crop, with the following mixture of grasses:—

11 bush.	per. Ryegrass	10 lbs.	Alsyke Clover
2 „	Italian	10 „	White „
10 lbs.	Fiorne grass	26 „	Timothy
10 „	Rough stalk meadow grass	10 „	Yellow Clover
20 „	Hard Fescue	16 „	Cowgrass.
5 „	Meadow Foxtail		

The whole when mixed giving about 3 bushels per acre, at a cost of 23s. The seeds did well, and by the month of August gave a full bite. The harrowing and sowing late in the season killed the most of the annual weeds, but still in some spots the chickweed was like to smother the young grasses, and these were cut with the scythe. The second year's grass was just a sheet of clover, but since then the clover has to a great extent disappeared.

Whilst this break was being wrought, another part of the moss which had been drained and heavily topdressed with soil, ashes, &c., was part ploughed, and part lightly turned over with the spade, and sown out along with the field adjoining in 1874 with a crop of oats and the usual mixture of grass seeds and a little extra Timothy. Cut for hay along with the field above in 1875, and then pastured for four years, this plot grazed fairly, but no clover appeared. By the erection of a new wire fence, dividing the moss land from the field above, about 3½ acres of this plot were put into the field for tillage, and were under a crop of black oats in 1880, and in 1881 under potatoes, heavily manured with police manure, about 40 tons per acre. The crop was a very indifferent one, having been three times during the summer cut down with frost. And in lifting them on 31st Oct. 1881 there was a good deal of disease.

In 1878, I got the remainder of the moss (about 10 acres) under potatoes, the bulk of which had been delved in 1873, ploughed and harrowed in 1877, which turned up very rough tough sods, not at all decomposed, although lying exposed to the weather all these years. This break was similarly treated as that first described, and with very similar results, only one crop of potatoes, however, being taken. During the long severe winter of 1878–79 it was heavily topdressed first with lime compound, about 80 carts per acre. The frost continuing, it was nearly all gone over again with a like quantity of soil, spent shale, &c., from the old oil-works; the whole was spread during the spring of 1879, well harrowed, but not ploughed, and sown out without a crop, with exactly the same proportion of grasses as detailed above, about the middle of June: pastured with sheep and lambs from beginning of August. In 1880 it gave a beautiful bite, well mixed with clover, and was grazed along with adjoining fields with two-year old bullocks. In 1881 it was a perfect sheet of clover, and any one crossing the field would hardly believe it to be pure moss land 15 or 20 feet deep. This break seems to retain the clover longer, which may be attributed to the heavy dressing of compound and ashes just previous to sowing out; whereas, in the former case, it was more wrought and cropped after the soil was put on. Every one who has seen the moss since being reclaimed admits it to be a perfect agricultural success; and the following statement, taken as accurately as possible from my books, shows it to be also financially successful, more especially when we take into consideration that the great part of the work was done by the ordinary farm staff when the farm work proper could not be advantageously proceeded with.

BYERS MOSS EXPENDITURE.

Dr.

		£	s.	d.
	To Drainage 20 ac. at £6, 18s. 4d. per ac.	£138	6	8
	„ Interest at 5% for say 7 years	48	8	4
	„ Soiling 20 ac. at an average of £4 per ac.	80	0	0
	„ Delving and ploughing at an average of £2, 10s. per ac.	50	0	0
874.	„ 5 acres (sown out) 15 tons police manure, £2, 5s.	11	5	0
875.	„ 5 acres potatoes, 30 tons police manure, £4, 10s.	22	10	0
	„ Artificial manure for ditto, £2, 13s.	13	5	0
876.	„ 5 acres potatoes, with artificial manure, £4 per ac.	20	0	0
877.	„ 5 acres potatoes topdressed with lime compound, £2	10	0	0
1878.	„ 10 acres potatoes, police manure, £4, 10s.	45	0	0
	„ artificial manure, £2	20	0	0
	„ Labour on 20 acres potatoes, say £2, 10s.	50	0	0
	„ Seed for 20 acres potatoes, 12 cwt (small) 3s. 6d. = 42s.	42	0	0
	„ Grasses, 15 ac. at 23s. = £17, 5s.; 5 ac. at 15s. = £3, 15s.	21	0	0
	„ Oats for 5 acres sown (1874), at 15s.	3	15	0
		£575	10	0

Cr.

		£	s.	d.
1874.	By 5 acres oats, Plot I., £7 per ac.	£35	0	0
1875.	„ 5 „ hay, „ £2, 10s. per ac.	12	10	0
„	„ 5 „ potatoes, Plot II., £27	135	0	0
1876.	„ 5 „ „ „ £19	95	0	0
1877.	„ 5 „ young grasses, Plot II., 20s.	5	0	0
1878–81.	By 5 acres grass on same plot, at 15s. = £3, 15s. per ac.	15	0	0
1876–79.	By 5 acres grass on first sown Plot I., at 15s. = £3, 15s. per acre	15	0	0
1878.	By 10 acres potatoes, Plot III., £18 per ac.	180	0	0
1879.	„ 10 „ young grasses, at 20s.	10	0	0
1880–81.	By 10 acres grass, 15s. per acre = £7, 10s.	15	0	0
1880.	By 3½ acres oats of Plot I., at £8 (net)	28	0	0
„	„ 1½ „ grass „ 15s.	1	2	6
1881.	„ 3½ „ potatoes „ £10 (net)	35	0	0
	„ 1½ „ grass „ 15s.	1	2	6
		£582	15	0

Showing a balance of £7, 5s. in favour of reclamation, the whole cost of same being recouped within the ten years, and leaving 20 acres of useful grazing land.

THE *PICEA GRANDIS*, AND ITS PROBABLE SUITABILITY AS A TIMBER TREE IN SCOTLAND.

By ROBERT HUTCHISON of Carlowrie.

[*Premium—The Medium Gold Medal.*]

Picea grandis, Loudon, Great Californian Silver Fir.

Synonyms—*Picea grandis*, Douglas; *Abies grandis*, Lindley; *Picea Parsonii*, Hort. America; *Picea* sp. (*Vancouver's Island*), Bridges; *Abies falcata*, Rafinesque.

Leaves.—Solitary, linear, flat, channelled above, obtuse or bifid at the ends, and quite entire—all irregularly arranged horizonally in double rows on each side of the branchlets in a more or less pectinate form on short twisted footstalks; those forming the upper tiers on each side of the shoots are much the shortest, and little more than ¾ of an inch in length, while the majority of those comprising the under series are of various lengths, and nearly double that of the upper ones, but not broader, and all of a deep glossy green above, and with two silvery white bands below, between the midrib and thickened margins, both of which are of a bright green colour.

Branches.—Chiefly in horizontal whorls, flat and spreading; branchlets glossy, smooth, rather short, compact, and placed laterally in two horizontal rows, and when young presenting quite a varnished appearance.

Cones.—Solitary, erect, bluntly cylindrical, 3½ inches long and 1½ inches broad.

Scales.—Very broad transversely. crescent-shaped, rounded on the exposed part, incurved at the edges, closely placed, downy externally, tolerably equal in size, deciduous, when fully ripe, and with the small fringed dorsal bracteas entirely covered by the overlapping scales.

Seeds.—Small, angular, and soft, with a wing ¾ of an inch long; seed-leaves five in number.

A NOBLE tree, always found in moist valleys, very much resembling the common silver fir when old, but differing in the young shoots, having a glossy or polished appearance, and in its much smaller cones with hidden dorsal bracteas.

It grows from 180 to 200 feet in height, with a rich brown scaly bark.

Its native *habitat* is Northern California, where it inhabits low moist valleys, or grows along the banks of rivers. It was first discovered by Douglas in 1831. Jeffrey also afterwards found it on the banks of Fraser River, from the Falls all the way down to the ocean, but particularly in alluvial soil on the river banks, and there attaining 280 feet in height, 5 feet in diameter of trunk, and with a bole of 50 feet without branches.

This conifer is perhaps, without any exaggeration, the most graceful and elegant of any of the recently introduced species of this interesting genus. In common with other species of the Coniferæ which have within the last half century been added to the flora of British woodlands, considerable confusion in regard to it arose on its first appearance in British soil. Originally discovered by Douglas in Northern California in 1830, the first seeds arrived in England in 1831. Of these very few appear to have germinated, and indeed it is pretty well ascertained that only one plant survived. This plant was originally in the fine pinetum at Hendon (Rev. Theodore Williams), and after passing through various collections, was at last settled in the well-known collection of Coniferæ at Elvaston, in Derbyshire, and there seems to be little doubt that all the larger specimens of *Picea grandis* (of the true type) in this country were grown from this parent tree; for until 1859 no other collector appears to have sent home seeds of the true *P. grandis* of Douglas till Mr. Bridges found it on Vancouver's Island, and transmitted a supply of seeds to London, under the name of *Picea* sp. *Vancouver's Island*, and latterly after their ascertained identity under that of *Picea grandis*. Mr. William Lobb and other collectors meantime, in their labours in California, fell in with a very similar pine, of which seeds and plants were distributed by Messrs. Low & Co. of Clapton Nursery, London, under the misleading name of *Picea grandis*, but which most botanists have since concurred in naming *Picea Lowiana*, to distinguish it from the true *P. grandis* of Douglas, which it resembles, but with which it is not identical. Comparison with the parent *P. grandis* at Elvaston places the question of non-identity beyond all doubt.

Since the introduction of the true *Picea grandis* into this country, its dispersion amongst the many good collections of Coniferæ in Britain has been slow. This arises, first of all, from the small quantity of seed originally transmitted by Douglas, their comparative failure in germination, and the consequent dearness of young plants for several years; and also from a fear that, as the young buds are put forth by the plant comparatively early in spring, they would suffer more or less from the prevailing severe late spring frosts to which the climate of Britain is so liable. This proneness to early growth would at once settle any doubts, if they existed, as to the distinct species of *P. grandis* from that of *P. Lowiana* referred to, for the last-named is not at all one of the early budding conifers in this country. On account of the scarcity and high price of young seeding plants on its first introduction, most of the young specimens and trees of any size now to be seen scattered over the country, have been propagated by grafting, or from layers or cuttings; hence, many of the examples amongst us are fan-shaped or branch-like, which habit they lose in time; but plants so raised, although many of them are beautiful, are inferior in trunk and boldness to those trees started from seed.

In considering the suitability of this pine as a timber-producing tree in Britain, we are naturally led, in the first instance, to consider its hardihood to withstand the vicissitudes of our changeable climate. In this respect we are unable to apply the usual test now so commonly adopted in considering the hardihood of the newer Coniferæ, namely, the impunity with which they survived the effects of the unparalleled winter's severity of 1860–61. At that time the comparatively few plants of *P. grandis* introduced and planted throughout the country were small in size, many, if not most, of them being only about 18 inches to 2 feet in height, and consequently in a great measure protected by the snowfall; but in no instance out of the returns of that severe winter, collected and tabulated in 1862 in the *Transactions of the Highland and Agricultural Society*, and recorded from all quarters, soils, and altitudes, do we find a single instance of the *P. grandis* having been killed by the intensity of that memorable frost. Recent experience of winters of equal severity, such as 1878–79, 1880–81, confirm the general belief in its thorough hardihood, and the progress which the young trees make in Scotland when they are fairly established in their sites unmistakably proves their complete suitability to the climate, and also that their constitutions are admirably fitted to grapple with the fickle nature of our spring winds and short summers, which frequently prove so destructive in their agency to many of the most beautiful and promising species of this desirable family of Coniferæ.

In regard to soil, *Picea grandis* has been found to thrive best in a free alluvial loamy soil, inclining rather to be of a sandy nature, upon a gravelly subsoil, or well-drained cool substratum. It thrives, however, as we find in many instances, even in a poor soil of gravelly light description on a clay and gravel subsoil, as at Blair-Drummond, Perthshire, where it is now thriving, and has attained a height of above 20 feet. In Morayshire, planted at Altyre in 1864, in a deep sandy loam, upon gravel, it is now 48 feet high; and girths at 1 foot from the ground, 4 feet 5 inches; and at 3 feet 5 inches, 5 feet. It has been making in this locality fully 3 feet of annual shoot of young wood for several years, and appears to have fairly established itself. Contrasted with other Coniferæ growing in the same situation, such as *P. magnifica*, *P. Pindrow*, *P. Cembra*, *P. Nordmanniana*, *P. Pinsapo*, *P. nobilis*, and others, the growth of the *Picea grandis* exceeds that of any of them; and its tall and straight tapering stem, broken in line only by the small side branches starting from it in regular tiers of beautifully horizontal growth, renders it at once conspicuous amongst its fellows in the pinetum. In the same site are two young trees, beautiful specimens, of the closely allied congener *Picea Lowii*, or *lasiocarpa*, or *Lowiana*, as it is variously called, and to which reference has already been made in this report. These are now respectively 26 and 32 feet in height, and were planted at the same time as *Picea grandis*. Their girths are also less than it presents, while the lengths of annual shoot made are also considerably shorter than those of the pine we are describing. The altitude of this site is about 200 feet above sea-level. Other examples might be stated to show that *Picea grandis* does not specially object to any soil in particular, provided the subsoil be not water-logged, but is of a cool and open or porous nature; and we are able to mention cases of its progress and growth in all descriptions of soil, as will be seen in the subsequent paragraphs of this monograph.

In regard to altitude of site in this country, while the largest specimens of *P. grandis* are generally found at the lower elevations, it does not seem to be averse to high altitudes, other conditions favourable to its progress being present. For example, it is found at Dolphinton, Lanarkshire, raised by Mr. Mackenzie from direct British Columbia seed, luxuriating at 834 feet above sea-level, where noble trees of it are now 36 feet 5 inches in height, in a clayey loam soil upon a clay subsoil, and where for four successive seasons it has made an annual growth of fully 4 feet. At a similar and even higher altitude, at Dalwick, Peeblesshire, in a thin sandy clay soil, it is now 25 feet high, and growing vigorously, and proving itself quite hardy. It appears to resemble the *Picea pectinata*, or silver fir, in a predilection for situations in valleys and along the steep banks of streams, and in such positions in many districts of Scotland and England it is making most satisfactory and rapid progress after being fairly established. At Glamis Castle, Forfarshire, altitude 230 to 250 feet, in soils of various characters, it is also succeeding admirably, and is fast proving itself a timber-producing tree of sterling value. In this situation we have been able to record the following specimens:—

No. 1. Height, 43 feet; circumference at 1 foot, 4 feet 3 inches, and at 5 feet, 3 feet 3 inches; soil, good black loam (moist); subsoil, gravel.

No. 2. Height, 32 feet; circumference at 1 foot, 3 feet 5 inches, and at 5 feet, 2 feet 11 inches; soil, dry black loam; subsoil, sandy clay.

No. 3. Height, 36 feet; circumference at 1 foot, 2 feet 11 inches, and at 5 feet, 2 feet 2 inches; soil, poor sandy soil, very dry; subsoil, dry white sand.

These trees were planted out sixteen years ago; they were then six years old, and there are many more of similar size, and are all very healthy, truly ornamental, and quite hardy. The progress of growth and development of timber, as shown from these examples, clearly point that *P. grandis* prefers a damp to a dry soil, and in such situations, when the young trees have fairly adapted themselves to the site, their growths are equal to, and in many cases even more rapid than, those of the common silver fir, Scotch fir, or larch.

At Murthly Castle, Perthshire, 200 feet altitude, it has been now planted out for nineteen years in sandy loam, upon a gravelly subsoil, resting upon red sandstone rock, at from 4 to 5 feet below the surface, and fully exposed to the north. The trees are now 40 feet in height, and girth 2 feet 4 inches at 3 feet from the ground. In this site both the true *P. grandis* of Douglas and that of Lobb are growing under identical circumstances, and are of same size and bulk of stem. Both varieties have proved quite hardy. For the first eight years after being planted out their progress was rather slow, but afterwards they made rapid strides annually, and seem to continue doing so—a circumstance which must doubtless make their timber soft till of mature age, and which may probably deter enthusiastic planters from introducing the pine largely in plantations, or as a nurse for early cutting or thinning, with a view to a profitable return. At the Cairnies, Perthshire, 660 feet altitude, in the noble and unique collection of the late Mr. Patton, there are fine specimens of this pine. One example now measures 33 feet 6 inches in height, and girth at 1 foot, 4 feet 1 inch, and at 5 feet, 2 feet 11 inches. This tree is now twenty-six years old, and grows in a thin moorish soil, on a hard retentive clay subsoil, with a southern exposure. Fine specimens also are found at Scone in the pinetum, now fully 20 feet high, and at other places in Perthshire, at various altitudes, and in different soils and exposures, but all equally thriving and hardy. At Hopetoun, Linlithgowshire, in the pinetum—which is one of the best-grown and most complete in Scotland, considering its extent, and being near the sea influence—we find a noble and thriving *P. grandis.* It is now twenty years old, and is growing in a clayish soil, with a retentive subsoil, and about 250 feet above sea-level, in a northern exposure. It is now 27 feet high, and girths 1 foot 9 inches at 5 feet from the ground. It has proved quite hardy—when in the same site other varieties of Coniferæ have failed—and is a fast-growing tree, with very healthy appearance. Unlike many of its fellows in the pinetum, its stem is most beautifully clean, and free from all blotches, blisters, or blemishes. Other good specimens of similar and smaller sizes may be found at Carlowrie, Newliston (West Lothian), Riccarton, Cramond, Craigiehall (Mid-Lothian), and at other situations in the middle districts of Scotland. On the western coasts, too, it is found under equally favourable auspices. At Rossdhu, Dumbartonshire, in the moist and genial climate of Lochlomond, it luxuriates as in its native *habitat;* and many instances might be stated illustrating its suitability to the climate of the western districts of Scotland.

In the southern counties it is also familiarly and favourably known for its beauty, rapidity of growth after being established, and graceful habit, as well as for its remarkable characteristic of concentrating its energies to form wood in its trunk or bole, the branches being very small in diameter in proportion to the girth of the stem of the tree. At Castle Kennedy it occupies an important place, and forms a striking feature in the splendid and probably unequalled pinetum established there. It there vies with the *P. insignis, P. nobilis, P. Pinsapo, P. cephalonica,* and others of the same class, in bearing the palm of merit for beauty, habit, growth, and luxuriance; and Mr. Fowler, whose enthusiastic love for the Coniferæ, and whose skill in growing them are well known, considers that the *P. grandis* is destined to become a valuable timber tree in Scotland, and to supplant the common and more slow-growing silver fir. His tallest specimen is now 38 feet in height, and girths at 1 foot from the ground, 7 feet 8 inches; and at 5 feet, 7 feet 4 inches.

But without multiplying instances of successful culture of *P. grandis* in Scotland, which would be an easy matter, the foregoing instances may be allowed to represent many other similar specimens in almost every county in Scotland, where the pine has proved itself perfectly hardy and adapted to the climate.

We may proceed now, before closing this paper, to notice the suitability of *P. grandis* for other districts of Britain, and also cursorily glance at its extreme aptitude for cultivation in the moist and genial climate of Ireland.

As might be supposed, most of the early and first-introduced specimens of this pine found their final home and site in the southern counties of England and in "the home counties" of the metropolis. Cultured there, by accident of proximity rather than by selection of site, many of the largest specimens at the present day are to be found; but whether they will maintain their early supremacy or not is a very different matter, and one which each revolving year is only too truly recording, as to results in regard to which arborists at no distant date will be able to form an accurate opinion. It would be merely multiplying words to mention the numerous instances throughout the midland and southern counties of England where the *P. grandis* has been acclimatised and found a congenial home. Being earlier introduced to these, than it was to Scottish localities, no wonder need be expressed that larger and finer examples, independently of climate, exist there than in our more northern latitude; but even in such favoured situations we find the *P. grandis* succeeding no better, nor growing in any faster ratio, than in the Scottish instances we have already cited. We shall only, therefore, very briefly notice a few instances of the progress of *P. grandis* in the south.

At Wear House, Exeter, Devon, probably the largest specimen in that county is to be found.* It is now fully 50 feet high, and thriving admirably, and quite hardy. At Bicton, also in Devonshire, there are many healthy and promising young trees, varying from 6 to 8 feet in height. They are growing in a sandy loam, upon a subsoil of red sandstone.

At The Rocks, Uckfield, Sussex, growing in a peat soil upon sandstone, there is a very fine specimen, which is now 38 feet high, and girths 3 feet 8 inches at 5 feet from the ground. At Lambton Park, Durham, the *P. grandis* has been repeatedly tried along with others of the Picea species, but they only survive for a few years and then die off, being unable to withstand the smoke and carbon-saturated atmosphere of the district.

At Dropmore, Maidenhead, Mr. Frost has been equally successful in the sterile soil of that locality in raising good examples of this pine, as he has with many other Coniferæ. In 1843 he raised a fine young *P. grandis* from a cutting taken from a plant sent from the Horticultural Society's Garden to Lord Grenville. In 1847 it was planted out, and at once grew rapidly. In 1874, when over 50 feet high, it produced six cones on the top branches, from which a few young plants were obtained. This tree is now a very handsome specimen, fully 70 feet high. The original tree, which is not so good an example as that grown from the cutting, has also produced cones about 6 inches long, and containing good seeds. This tree for many years had produced male blossoms only, but never any female till 1878.

At Mentmore, Buckinghamshire, are several fine young trees of *P. grandis*, averaging from 15 to 20 feet in height, and very promising specimens.

Although *Picea grandis*, like all the silver fir species, does not seem to find its proper element in purely mountainous soils, but in loamy or alluvial deposits, and in valleys more or less sheltered, it is found thriving in various situations of a hilly nature in Wales, and making good and satisfactory progress; for instance, at Hafodunos, Abergele, North Wales, at a lofty altitude, we find it planted in a clayey loam upon whinstone rock, fifteen years ago, now 30 feet in height, girthing 2 feet 4 inches and 2 feet 1 inch at 3 and 5 feet above the ground-line. Again, at Penryhn Park, Bangor, North Wales, in a sandy loam, upon slate rock, and at a lofty altitude also, there is a noble tree, now 65 feet in height, with a girth of stem at 3 feet from the ground of 5 feet 4 inches, and a diameter of spread of branches of 27 feet.

The soil and climate of Ireland seem admirably adapted for the growth of *P. grandis*, and several notable examples are recorded in various localities in that country. At Arctrum, Inniscarra, county Cork, we find it in a dry marly subsoil, underlying a thin light loam, quite hardy, and growing fully 3 feet per annum, and spreading its branches in proportion. In this site it is now 25 feet high. At Ballinacourte, Tipperary, and adjoining property, there are five fine trees, well grown, tall, and straight; they are growing on the slope of a small ravine, and are over 50 feet high, with beautiful "clean" stems, and, judging from their rapid growth, the species seems well adapted for planting in quantity with advantage to become forest trees. At Glaslough, Monaghan, 154 feet altitude, in yellow loam, upon heavy yellow clay subsoil, the largest *Picea grandis*, although quite hardy, has, owing to its situation being too crowded, been unable to show its capability for developing timber; but many other younger plants give promise of vigorous growth and rapid progress. At Hamwood, Clonee, county Meath, a fine *P. grandis* may be seen, now 63 feet high, and 7 feet in girth at 4 feet from the ground. This tree was planted in 1850; the soil is limestone, and close to limestone rock, about 3 feet from the surface. The soil is rather stiff, and the site is 300 feet above the sea, and 13 miles distant from it, and exposed to a strong south and south-east wind, but sheltered from the north by beech trees.

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* This tree was the original parent plant in Mr. Veitch's collection in Exeter Nursery, and was purchased at the sale when that establishment was broken up. It is consequently probably one of the earliest importations from the seed first sent home by Douglas.

From the foregoing statistics of the growth and progress of the *P. grandis* in this country, it will be seen that hardly sufficient data yet exist to enable us to form an opinion as to its prospective value as a timber tree. In the few instances in which an opportunity has been afforded of cutting the wood—and these have only been from young and immature trees—the timber has proved hard and rigid, and apparently of a desirable and useful kind, but with a tendency to be rather coarse-grained. With age, no doubt, and greater maturity, this defect may disappear, and from the hardihood and rapidity of growth of *P. grandis* in all sorts of situations, its more general cultivation in this country as a useful timber tree, as well as a highly ornamental variety in the landscape, is greatly to be desired.

THE AGRICULTURE OF THE COUNTIES OF CLACKMANNAN AND KINROSS.

By JAMES TAIT, Edinburgh.

[*Premium—Ten Sovereigns.*]

THE county of Clackmannan is bounded on the south by the Firth of Forth, on the west by the counties of Stirling and Perth, on the north by the county of Perth, and on the east by the counties of Kinross and Fife. It is the smallest county in Scotland, being only 10 miles long from east to west, and not more than 8 miles in extreme width. The area of the county is 31,876 acres, of which about two-thirds are cultivated. It contains the four parishes of Alloa, Clackmannan, Dollar, and Tillicoultry, besides part of Logie, the remainder of which is in the county of Perth. Clackmannan unites with Kinross, the parish of Alva in Stirlingshire, the Perthshire part of Logie, and the parishes of Tulliallan and Culross, in sending one member to Parliament. The population of the county in 1881 was 25,680, and the number of inhabited houses 5290. According to the Parliamentary Return 1872–73, there were in all 1227 owners of lands and heritages, of whom 1137 had less than one acre, and 90 had one acre or upwards. The 90 larger proprietors own 29,864 acres, the valued rent of which is £64,428, 4s., leaving 325 acres, valued at £33,054, 2s., as the total amount owned by 1137 small proprietors. The total valuation of the county in 1881 was £114,971, in 1856 it was £67,620, 5s.

According to the Board of Trade Returns for 1881, there were, under all kinds of crop, bare fallow, and grass, 15,758 acres, of which 768 were under wheat, 1101 under barley or bere, 3296 under oats, 19 under rye, and 715 under beans; a total of 5899 under grain crops. There were under green crops 1463 acres, of which 387 were potatoes, 960 turnips and swedes, 22 mangold, 16 cabbage, kohl rabi, and rape, and 72 vetches and other green crops except clover and grass. Under clover, sanfoin, and grasses under rotation, there were 3569 acres, 4546 acres in permanent pasture, and 281 acres in bare fallow. Of live stock there were 515 horses, including ponies, returned by occupiers of land as used solely for agricultural purposes; unbroken horses and mares kept solely for breeding, 203. Of cattle there were 3496, including 1308 cows and heifers in milk or in calf; other cattle of two years old and upwards, 1050, and of cattle under two years, 1138. Of sheep there were 9537, of which 6588 were one year old or upwards, and 2949 below one year. There were 1523 pigs.

The county of Kinross is bounded on the north by the county of Perth, on the west by Clackmannan, on the south and east by the county of Fife. The general figure of the county is somewhat circular, but the boundary is very irregular. It extends from east to west about 13 miles, and from north to south about 12 miles. The county includes the four parishes of Cleish, Kinross, Orwell, and Portmoak. The population in 1881 was 6697, with 1705 inhabited houses. From the Parliamentary Return 1872–73, it appears that the estimated area of the county is 44,888 acres, and the valued rental was then £64,471, 14s. There were altogether 725 proprietors, of whom 468 had less than one acre, and had among them 86 acres; while 257 had one acre or upwards, and owned altogether 44,802 acres.

According to the Agricultural Returns for 1881, the county contained 49,812 acres, of which 31,459 acres were under crops, bare fallow, and grass. Under corn crops there were 7296 acres, of which 112 were under wheat, 1350 under barley or bere, 5801 under oats, 8 acres under rye, and 25 under beans. There were 3698 acres under green crops, of which 957 were under potatoes, 2663 under turnips and swedes, 4 under carrots, 11 under cabbage, kohl rabi, or rape, and 63 under vetches or other green crops, except clover or grass. There were 11,348 acres under clover, sanfoin, and grasses under rotation, 9100 in permanent pasture or grass not broken up in rotation, exclusive of heath or mountain land, and 17 acres of bare fallow. Of live stock there were 1039 horses, of which 699 were returned as used exclusively for purposes of agriculture, &c., and 340 unbroken horses and mares kept solely for purposes of breeding. There were 5555 cattle, of which 984 were cows or heifers in milk or calf, 1697 other cattle two years old and upwards, and 2874 under two years. Of sheep there were 26,530, including 17,084 one year old or upwards, and 9446 under one year. There were 504 pigs.

Topography and History.

The two counties of Clackmannan and Kinross, together with the county of Fife and a slip of Perthshire on the margin of the Forth, on which stands the town of Culross, include the territory anciently called the Ross, which was a promontory situated between the Forth and the Tay, and bounded on the north-west by the Ochil hills. The county of Clackmannan consists chiefly of the Devon valley, declining gently from the Ochil hills to the

Firth of Forth. All the lower lands are rich, generally arable, and well cultivated. There is an expanse of carse land between Clackmannan and the Forth, and another west of Alloa. The uplands are verdant, and the hills yield some of the best sheep pasture in Scotland. The county of Kinross has been described as an open vale or plain, environed by uplands, having the Ochils on the north, the Lomond hills on the east, Benarty on the south-east, Cleish hills on the south, and Alva hills on the west. The principal streams are the Gairney, the North and South Queich, the Kelty, and the Orr, the first two of which flow into Loch Leven. The county of Clackmannan has many features of interest. The town is situated on an eminence, rising gradually from the plain to a height of 190 feet above the level of the Forth. It is an old-fashioned place, interesting agriculturally because of the many householders who are able to keep a cow. West from the town is the old Tower of Clackmannan, which commands a singularly varied and romantic prospect. Two miles westward is the town of Alloa, close to which is the tower once inhabited by the Earls of Mar, and at a little distance the present residence of the family. The pleasure grounds, which are very extensive, are bounded on the north by a stone wall, and on the south by the Forth. The gardens were laid out in the last century, with long avenues and clipped hedges, and an extensive lawn with many fine trees. All kinds of trees thrive remarkably well, and there are oaks, beeches, elms, planes or sycamores, limes, and ash trees of considerable circumference.

North from Clackmannan, at a distance of 4 miles, are the Ochils, the scenery of which is unlike anything else in Scotland. Their general character is that of a great igneous block, developing itself in amygdaloid felspar and porphyry, and occasionally in fine pentagonal columns of basaltic greenstone. They are cut into deep clefts, so narrow as not to be visible at a distance, but very striking and picturesque when closely examined. The glens are uninhabited, and the silence is broken only by the brawling of torrents, which struggle on amid rocks and boulders. Enclosed on three sides by two of these remarkable glens is Castle Campbell, once a fortress of the Argyle family, now the property of Mr. Orr of Harvieston. Anciently it was called Castle Gloom, a name peculiarly suitable when we consider the eerie glen through which it is approached. The entrance is near Dollar, where a charge of 6d. is paid to a gate-keeper. A good and well-kept footpath leads up the glen, which is densely wooded, and at the bottom of which a considerable stream thunders onward amid great blocks of stone and many ledges of rock. A quarter of a mile from the gate is a confluence of two streams, locally called "Care" and "Sorrow;" and in the loop formed by these weird glens, on a lofty, almost insulated promontory, are the ruins of the castle. One of the streams gurgles with many a fall through a gloomy chasm, as cleanly and sharply cut as if it had been done with a chisel. From the top of the ruined castle is a most extensive prospect to the southward; but when we looked on the landscape bathed in the sunshine of a brilliant June day, with blackfaced sheep grazing peacefully on the hill sides, and the voice of the cuckoo echoing in the woods, there were few traces left of those days of darkness and blood when the castle was practically useful.

The chief river of Clackmannan is the Devon, which rises in the parish of Blackford in Perthshire, and, after a singularly tortuous course of nearly 40 miles, merges its water in the Forth, 2 miles west from Alloa. It flows east a distance of 10 miles to Crook o' Devon, then turns west through a well-wooded glen, forming beautiful cascades at the Rumbling Bridge, and meanders through a gradually expanding vale till it enters the Forth. Between Crook o' Devon and Rumbling Bridge are arable farms of moderate size, some of the fields extending up the slopes of the hills, which are neither very steep nor very high. At Rumbling Bridge the vale is narrow, and near Dollar much of the flat land is pastured with cattle; but farther on there is a broader expanse, with fields, large, well fenced, and well cultivated. From the neighbourhood of Dollar, by Tillicoultry, the Ochils rise abrupt and high from the flat land, their steep rocky sides bearing good grass, but sometimes stunted furze, and not unfrequently shingle. The Devon is an excellent trouting stream, free to all anglers, and on a favourable day from four to eight dozen good trout can be landed, some of which may be a pound in weight.

Clackmannan has for centuries been the seat of the chief of the Bruce family in Scotland. At an early period John de Bruce, third son of Robert, one of the Earls of Annandale, became its proprietor. King David II. gave it to his kinsman, Robert Bruce, the first laird of Clackmannan; and the old tower is said to have been built by King Robert Bruce himself.

EARLY AGRICULTURAL IMPROVEMENTS.

In the latter part of last century the real rent of Clackmannan parish was £4700 sterling. There were 1000 acres of carse land, all very fertile, and rented at about 43s. an acre; but in a great part of the parish the soil was a cold clay, with a wet bottom, some of which was so poor as not to be worth cultivating. A hundred years ago the agriculture of those parts of the parish was wretched. The holdings were small, and the tenants were content with scratching the surface of a small part of their lands, the produce of which was barely sufficient to maintain them and their families, while the rents were paid out of money obtained for driving coals. The steadings were miserable. There were no fences, and the soil was overgrown with whins, broom, and weeds. Toward the close of the century there was a tendency to improvement in both the parishes of Clackmannan and Alloa. As leases expired the size of farms was increased, services and thirlages were abolished, fences in the shape of walls 2½ feet high became numerous. In the parish of Clackmannan the number of farms was reduced to the extent of forty in twenty years. In both parishes the rotation of crops was much improved. Instead of the old method of beans, barley, and oats, agriculturists adopted the method of summer fallow, wheat, beans, barley, grass, and oats on the best soil; while lands of inferior quality had crops suited to their character. Most of the wet lands had been drained, the old form of crooked ridges had given place to straight furrows, and Small's two-horse plough was in general use. It was not considered that turnip husbandry was suited to the district, as the low lands and much of the higher had a subsoil of cold, stiff clay, and the damage done by poaching the ground when taking off the crop counterbalanced the advantages of cultivating that useful root. Just as the spirit of improvement was beginning to spread, an intelligent East Lothian farmer settled in Alloa parish, and took the lead in draining, improved ploughing, and general good culture. Through his efforts a Farmers' Society for the county was formed in 1784, and ploughing matches were instituted, with a silver medal for the first prize. The average produce from the best lands was then 10 bolls of wheat per acre, 7 bolls of beans, 7 of barley, and 8 of oats. The measures employed were the Stirlingshire firlot for oats and barley, the Linlithgow measure for wheat, and a firlot for beans and peas about a quarter in the boll larger than the Linlithgow wheat firlot.

In 1787 there was erected, at Kilbagie, the first thrashing machine on the principle ultimately adopted by Andrew Meikle. The machine included scutchers shod with iron fixed on a strong beam or cylinder, which revolved with great velocity, and, in process of so revolving, beat off the corn, instead of rubbing it off by pressure, as had been attempted by other inventors. To this cylinder, or drum, were added fluted feeding rollers, and afterwards a machine for shaking the straw, fanners for winnowing the corn, and other improvements. The first machine was erected for Mr. Stein, Kilbagie, who had difficulty in obtaining a sufficient number of barn-men to thrash straw for his cattle, of which he had a large stock. The novelty of the experiment, and the doubt entertained by Mr. Stein as to the efficiency of the proposed machine, induced him to require as a condition that if it did not succeed, Meikle should get no payment. But it did succeed, and the thrashing machine at Kilbagie, driven by water, continued for a long course of years in good working order.

SOIL, CLIMATE, &C.

The carse of Clackmannan is a rich loam, a large proportion of which has been reclaimed from the Forth, and is still protected by strong embankments. Near the river it is very deep clay; the upper half is clay on a foundation of whinstone; and the carse west from Alloa is on gravel and shells. The climate on the carse is fair, but the crops are generally two weeks later than they are in the Lothians, and about the same as in the carse of Stirling. The soil is heavy to work, and requires a pair of horses for every 50 imperial acres. In the dry field part of Clackmannan the climate is considered very good. Snow seldom lies to any great depth except on the Ochils. The soil varies from stiff clay to sandy loam and peat. Most of the clay and damp soils have been much improved by draining, but a good deal remains to be done in this direction. On the hills near Tillicoultry the soil is thin, rocks crop out in many places, and there is a proportion of shingle; but farther north, at and beyond Dollar, the hills are less steep, and the rocks are better covered with soil, on which grows a verdant and feeding turf.

At the entrance to Kinross-shire, at Crook o' Devon, is a lump of moss which is obviously a remnant of the time when the whole district was an extensive peat moss. The climate is naturally moist and cold, but has been much improved by extensive draining, and now there is much good arable land resting on gravel intermixed with clayey loam. In the higher grounds, the climate is still cold and wet, owing chiefly to the hills, which attract the clouds. Frost sets in sooner, and continues longer than in the adjacent districts to the southward. The parish of Portmoak is sheltered from the cold easterly winds of spring, but is much exposed to west winds, blowing across the Ochils, often covered with snow, and along the surface of the loch. Near the shores of Lochleven the harvest is at least a fortnight later than it is even a few miles farther east. At Lochleven sluice, 360 feet above the sea level, the annual rainfall is about 37 inches; while at Burntisland it is 29, at Elie 27, at Auchtermuchty 33, but at Falkland, owing to the proximity of hills, it is 42.

No appliances seem to exist for ascertaining the rainfall among the Ochils, but at times it is excessive. A notable instance occurred in August 1877. All over Scotland there was heavy rain, with an easterly wind, on the 18th and two following days, with great flooding and extensive destruction of crops; but it was on the 28th that the memorable flood took place on the

Ochils. In the county of Fife rain came on heavily, with a south-east wind, at nine in the evening of the 27th, and in twenty-one hours 2·33 inches of rain fell at Ladybank. The rivers were in high flood, and many fields were submerged. At Tillicoultry, close to the highest of the Ochils, rain fell heavily during the whole night, and continued unabated at six in the morning; but the stream which gushes down through the western part of the town gave no cause for alarm. About half-past seven the sky suddenly became more gloomy, and eye-witnesses whose windows look westward describe the scene as like nothing so much as the sombre pictures by which the universal deluge is usually represented. In half an hour the hills above Tillicoultry were white with tumbling cataracts, while the burn which tumbles down through a mountain gorge overflowed its banks, and poured its gushing waters into adjoining streets. The factory belonging to William Hutchison & Co. was situated near the mouth of the glen, and occupied ground on both sides of the stream. As the flood rose and threatened the building, Mr. Hutchison was taking measures to lessen the risk, and, with two of his work-people, a man and a woman, was on a wooden bridge, which suddenly gave way, and all three were carried down by the torrent. Mr. Hutchison and the woman were drowned; the man was with difficulty rescued. In the town of Tillicoultry damage was done to the extent of £7000 or £8000, and visitors came long distances to witness the scene of devastation. East from the town a deep indentation was made in the hill side, which still remains as a memorial of the deluge. At Dollar the flood was great, but not equal to what it was on the higher hills. In Kinross-shire the storm was accompanied with thunder and lightning. At Milnathort there was a sharp peal of thunder at nine o'clock, and subsequent peals showed that the storm travelled west by north, in the direction of the Ochils, where it was conjectured a waterspout had burst, as, in less than an hour, the streams which intersect Milnathort had risen to a height which was not adequately accounted for by the local rainfall. It is worthy of notice, that though the wind was easterly, the heaviest rainfall in Kinross-shire was an hour or more after the flood at Tillicoultry, which seems to indicate that the storm-cloud was travelling in a different direction from the wind.

Farm Buildings, Machinery, and Implements.

In the carse district farm buildings are good, and landlords have recently spent large sums in improving them, generally with money borrowed from the Government. Many of the cattle courts are now covered over, mostly with tiled roofs. In the higher districts, also, farm buildings have been greatly improved, many having covered sheds for the cattle, with water often conducted to the steading at very considerable expense. Thrashing is largely done by steam, and the same motive power is much used in cultivation, and can readily be obtained on hire. Where horse-power is used for thrashing, the old-fashioned beater drum is rapidly giving place to pegs, on what is called the Ayrshire principle, which can be worked with much less power. A good deal of thrashing is done with portable machines; and some farms have water power. The grain is all cut with reaping machines, and the hay with mowers. In the county of Kinross there is an increasing number of covered courts, and, in not a few cases, the cattle are tied up to a stake, like cows. Implements are of the most improved description.

ROADS, FENCES, TILLAGE OPERATIONS, &c.

In the carse of Clackmannan roads have been badly kept, but improvement is visible since the management came into the hands of the new Board. In the same district there is little fencing, as there is almost no pasture land. Any fences that exist are of wire, with wooden stakes. Tillage of the land is very difficult, and to prepare the soil for barley or turnips requires a great deal of ploughing, grubbing, harrowing, rolling, and breaking clods. If not properly tided, it is at times quite unworkable. The carse is generally wrought on the six-shift—that is, wheat, beans, barley, hay, oats, turnips, or summer fallow. Some farm on the seven-shift rotation, taking mashlum, or beans and oats mixed after oats, and this method is approved by some good authorities. All the manure made on the farm is applied to beans and turnips, together with horse and cow manure, which can easily be purchased in the neighbourhood, as many of the inhabitants of Clackmannan keep cows. Guano and bones are also applied to turnips, and a large portion of the oats are topdressed with nitrate of soda. Half the shift is usually put in turnips, the other half is fallowed. Few potatoes are grown. Swedish turnips, if they are got early sown, turn out large crops, quite equal to any other part of Scotland. The bean crop, also, answers remarkably well. One of the most successful cultivators of a carse farm is Mr. Alexander, Loanside, who in 1880, and again in 1881, was awarded the premium of the Clackmannanshire Society—1st, for the best made hay on a carse farm; 2nd, for the best green crops on a carse farm; and 3rd, for the best turnips on a carse farm.

In other parts of the county statute labour roads have been much improved since the adoption of the Roads and Bridges Act two years ago, and the old turnpike roads are also well kept. Fences consist of stone dykes, hedges, and wire palings, generally in very good order. The usual rotation of crops consists of potatoes and turnips, with a grain crop following, which may be wheat, barley, or oats, generally one or other of the two last named, then hay or pasture for two or more years, then oats, followed again by a green crop. The most common grain crop is oats, of which the quantity is probably three times that of barley, and six times that of wheat or beans. Lately the mixture of beans and oats, called mashlum, has been regarded with increasing favour on dry field as well as carse land. Turnips and potatoes are grown, the former exceeding the latter in the proportion of two to one. A few mangolds are also grown on the best farms. Manure is plentiful. Besides what is made in the farm-yard, it can be purchased at four shillings a ton for the best, produced in three large distilleries, and by large numbers of cows and pigs kept in the towns and villages. Guano, bones, and other manufactured fertilisers are also very extensively used.

In Kinross-shire there are wire fences, stone dykes, sometimes with one or two wires on the top, and, in some cases, thorn hedges, generally well kept. In that county the six-year course is usually adopted in cropping, the rotation consisting of green crop, corn, and three years in grass, but in some cases only two. Almost no wheat, and not much barley is grown. A good many potatoes are produced on moss land, especially on the pendicles about Crook of Devon. They are very suitable for seed potatoes in other districts. The land is largely cultivated with the grubber. In addition to farm-yard manure, bones and superphosphates are used, but farmers grudge the expense of these artificial manures. Turnips are extensively eaten with sheep, which helps to improve the soil.

CROPS, &c.

The grain crops in the carse consist of wheat, oats, barley, and beans. In a fair season the land, if in good condition, will yield 7 quarters of beans, 5 quarters of wheat, 6 quarters of barley, 6½ quarters of oats, and 250 stones of hay, all per imperial acre. On a field of turnips on the farm of Loanside, which gained the Stirlingshire and Clackmannanshire Society's prize in 1881, the crop weighed 28 tons per imperial acre. In Kinross-shire the ordinary produce per imperial acre is oats 5 quarters, barley 4 to 5 quarters, potatoes 6 tons, turnips 15 to 20 tons, and hay 150 stones. In that county increasing attention is paid to grass. About 6 pounds of clover seed is sown to the acre, mixed with a bushel and a half of rye-grass. There are also a few meadows of Timothy grass, especially on the Blair Adam estate. In some instances grass has been sown without a grain crop. In Clackmannan the principal meadows are in the policies of the Earl of Mar and Kellie, Lord Balfour of Burleigh, and Mr. Orr of Harviestoun. All along the Devon valley there is much green pasture, and the Ochils are, of course, wholly pastoral. In Kinross-shire the proportion of grass on every farm is large, and a good deal of land is kept permanently in grass parks.

LIVE STOCK, &C.

Cattle are not reared to any extent in the carse, but a good many are bought at Falkirk and elsewhere in autumn, wintered, and sold in spring, chiefly to local dealers. The wintering of cattle has paid well lately. No sheep are kept, and no cows except what are required to supply with milk the farmer's family, and the work-people. Very few cattle are fed in the carse. Much attention is given to the breeding of horses, and the Clackmannanshire Agricultural Society pays the highest premium for a stallion of any Society in Scotland except the Highland and Agricultural Society. The horses are good, steady Clydesdales. In other parts of the county the cattle consist of crosses bred from Ayrshire cows and short-horned bulls, but lately a number of Irish cows have been bought by dairymen in the towns. A good many cattle are fattened on the pastures, getting cake, and draff from the distilleries, but the greater number are finished in winter on turnips, cake, and grain. As regards sheep, there are some fine Leicesters kept on some of the best farms; cross hoggs also are wintered and fattened on turnips and draff, or grass. Blackfaced ewes are kept on the Ochils, and crosses are bred from them with Leicester rams.

In Kinross-shire there are some good short-horned cattle, a good many crosses, and lately some Ayrshire cows have been imported, chiefly for dairy farms, of which there are seven or eight in the county. Six or seven have been established within the last five or six years. Some let the cows for £15 or £16 each cow, giving them what grows on the farm, and a certain quantity of bean meal. In the county of Kinross more horses are reared than in any other county in proportion to its size, and they find a ready market. The sheep are chiefly blackfaced; but at Annacroich is a flock of Leicesters, about forty or fifty rams from which are sold every year in Edinburgh, and bring good prices.

In the county of Clackmannan there is one good herd of short-horns, the property of Mr. Andrew Mitchell.

LAND TENURE, CAPITAL, &C.

In the carse, land is generally held on a nineteen years lease, with the old conditions, except that, in some cases, liberty is given to sell straw and turnips, but in this case manure must be purchased. The capital required for 100 acres is about £1200. The condition of the farmer will compare favourably with that of any other district in Scotland, but they are all practical men, who understand the business and personally superintend all departments of the farm work. Most of the proprietors have given large reductions of rent during the recent unfavourable seasons, and farmers have weathered the storm who might otherwise have been compelled to succumb; but tenants consider the rents too high, on which account they cannot keep the land in such good condition as it might be. The land is generally pretty well drained; but as part of the carse is very flat, the drains need to be often renewed. In the carse of Clackmannan the Forth is prevented from overflowing the land by a strong embankment, through openings in which the water from the land can escape only when the tide is back. When the tide is rising a sluice closes to exclude the advancing water; but meanwhile the water flowing from the land accumulates behind the embankment, and in wet weather the amount is sometimes such as to overflow part of the fields. Rent in the carse is from £3 to £3, 10s. per Scotch acre. In Kinross-shire leases are generally for nineteen years; but a large proportion of proprietors farm their own land. The amount of capital required is £8 an acre, as the land is light, and a couple of horses can do more than in some other places. Rents are much lower than in the carse. The farm of Earnieside, 700 acres in extent, wholly grazing, and occupied with blackfaced sheep crossed with Leicester tups, is let for £210 a year. The farm of Braughty, 510 acres in extent, also wholly pastoral, is let for £210. Craighead, 694 acres in extent, nearly all in grass, keeps three or four hundred blackfaced ewes, and pays £205 of rent. Golland, 455 acres in extent, all at present in grass, is worth about £442 of rent. There have lately been some reductions. Wester Coldrain, 284 acres in extent, was formerly let for £335, but has lately been re-let at a reduction. Seggie, in the parish of Orwell, 465 acres in extent, was let formerly at £582, but has been reduced to about £420. Westhall, in the same neighbourhood, has been reduced in a similar proportion.

None of the farms in Kinross-shire are very large. One of the largest in Orwell parish is Seggiebank, 540 acres, rented at £400. Craigow Mill and Castlehill extend to 642 acres, and the rent is £430. South Dalqueich and Shanwell, contain 231 acres, and are let for £330. Arlary, 261 acres, formerly paid a rent of £530, but is now occupied by Mr. Glass, the proprietor. Warroch, 790 acres, is occupied by the proprietor, at an estimated rent of £455. Orwell, owned by the Bishop of Glasgow, and occupied by Mr. James S. Fleming, is 305 acres in extent, and the rent is £420. In Portmoak parish, rents are somewhat higher than in other parts of the county. West Mains, owned by the Marquis of Northampton, and occupied by Mr. John Paton, Standingstones, East Lothian, is 350 acres in extent, and the rent is £530. WestÈcklay, 295 acres, is owned and occupied by Mr. Thomas Miller Tod, and the valued rent is £400.

LABOUR, &c.

In nearly all parts of the two counties bothies prevail to a greater or less extent. In the carse about half the men are married, the others are in bothies. Houses are pretty good, without being too expensive. Wages of married men are about £30 a year, besides meal and a bag or two of potatoes. They get milk also, for which they pay a moderate price. The quantity of meal is half a boll of oatmeal every four weeks, or six and a half bolls in the year. Bothy men have about £2 less, with the same perquisites. In Kinross-shire married men have a house and garden, and some get potatoes planted, while others get two cart-loads of potatoes. They have six and a half loads of oatmeal in the year, and 14 gills of milk a day, winter and summer, but some farmers give more in summer and less in winter. Bothy men get meal and milk, the same as the married men, and they get potatoes to boil for supper from lifting time till planting time. They get £20 to £22 in money; and they are hired for the year from Martinmas till Martinmas. Domestic servants are engaged by the year, and get £10 to £12. Out-workers have 1s. per day all the year; but potato lifters get 1s. 8d. to 2s. a day; and harvest workers 3d. an hour and their dinner. In harvest it is common in Kinross-shire to begin work at 8 o'clock, continue till 10 when there is a quarter of an hour's interval, have an hour for dinner from 1 till 2 o'clock, and have another quarter of an hour's rest in the afternoon. Wages are 50s. on an average lower than they were some years since; and men are more plentiful than they were formerly.

PROGRESS DURING THE PAST TWENTY-FIVE YEARS.

Though the past quarter of a century has included a period of depression in the agricultural world, a good deal of progress has been made. Conspicuous among improvers has been the Earl of Mar and Kellie. On the part of the Mar estates called the Forest, new farm-houses have been built at Hazleyshaw, Gibsley, Woodside, Garthnowie, and Knowehead. Hazleyshaw was the first, and credit is due to the tenant, Mr. Blelloch, for having induced the late Earl of Mar to make a beginning in a really good work. On the same farm the old steading has been remodelled, and a double set of feeding boxes has been introduced, with turnip house at the end, and a gangway between, from which the cattle are fed. Most of the farms on Lord Mar's estates, including those at Alloa and Ferrytown, have their cattle sheds much in the same style. In all parts of the counties there is an increasing number of covered courts.

There has been a good deal of draining effected during these twenty-five years. The farms tenanted by the Messrs. Mitchell, especially Meadowhill and Allaleckie, have both been thoroughly drained during that time, also the farm of Gibsley, a large portion of Woodside, and less or more on all the farms on Lord Mar's estates. The greater part of Hazleyshaw farm was reclaimed fully twenty years ago; and on Gibsley not less than from 70 to 80 acres have been reclaimed within the last ten years. This farm is tenanted by Mr. Thomas Thomson, Bankhead, Alloa, and since he became tenant the farm is believed to be worth twice the rent paid by the former tenant. On the estate of Harviestoun, the property of James Orr, Esq., the farms of Aberdona and Bathcarthy have been very much improved by draining, and a great deal of muir reclaimed, and stone dykes built, as well as a fine steading erected. The proprietor has brought water from the Ochils by gravitation; and the tenant, Mr. William Stirling, who has a dairy farm, has lately erected an engine for driving his churn by water power. Water has also been brought by gravitation to Woodside, on the same estate, of which Messrs. Scotland are the tenants; and also to the farm of Meadowhill, tenanted by Messrs. A. and A. Mitchell. To Gartknowie water is brought from a considerable distance, having been previously elevated with a pump to a sufficient height.

A good many fences of different kinds have been constructed. On Hazleyshaw farm most of the boundary fences are of wire, as also are a great part of the subdivisions. The march dyke between the properties of Lord Mar and Lord Abercromby is of stone. Wire fences have also been erected very extensively on Meadowhill and Knowhead, and Woodside, as also at Gartgreenie and Gibsley, all within little more than fifteen years.

The Earl of Mar and the Hon. R. Preston Bruce, M.P., have recently completed the straightening of the Black Devon between Meadowhill and Gartknowie and Piper's Pool, at a cost of £200 or £300. The old channel where the bends were has been all filled up, and the newly-cut channel has been strongly embanked.

In Kinross-shire there has been reclamation of land to a limited extent, and considerable improvements in steadings. James Richard Haig, Esq. of Blairhill, has a considerable farm in Kinross parish, on which a good deal of attention is bestowed. The highest rent is paid by Mr. James Stevenson for Cavilston and Brunthill, and the land is well maintained with manure driven from Kinross. Turfhills, a mile from Kinross, farmed by Mr. Henderson, the proprietor, affords an instance of land kept in a high state of cultivation. Wester Balado, 460 acres in extent, is occupied by Mr. John Ramage Dawson, who feeds many cattle on draff from the distillery. On the farms of Kilduff, north and south, and on Shorlahill, Mr. Thomas Spowart of Dunfermline has made improvements. The changes in the direction of dairy farming may be regarded as improvements, as the climate is well suited for this kind of industry. Generally the milk is sent to Dunfermline, which can easily be done now since railway communication is so direct.

OTHER INDUSTRIES.

A century ago there were collieries at Clackmannan, Sauchie, and Kennet; and about 7000 tons were annually exported to Leith, Dunbar, Perth, Dundee, Montrose, and other places. The working of the Sauchie coal dates back to a remote period, and much of it was used by the Devon Iron Company. The Kennet coal was used in distilleries; but after 1789 about 2000 tons a year were shipped to Leith. The Devon Iron Company was begun in July 1792, and they had two blast furnaces; but the seam of iron became nearly exhausted. The Clackmannan coal is a valuable deposit, and the whole is now worked by the Alloa Coal Company.

There were distilleries at Kilbagie and Kennetpans; and previous to 1788 the manufacture of Scotch spirits was carried on to an extent unknown in any other place. At Kilbagie alone there were 60,000 bolls of corn used in the manufacture of whisky, and 3000 tons of spirits were manufactured. The excise duties paid at Kilbagie and Kennetpans were said to be greater than the whole land tax of Scotland at that time. Owing to changes in the law, both distilleries were wrecked, and though they resumed operations, the glory was departed. At Kilbagie there is now an extensive paper manufactory; but there are in and near Alloa three distilleries and six breweries. Carsebridge Distillery is one of the largest in the country, and can turn out 60,000 gallons of spirits in a week. Glenochil is next in extent, and then Cambus. A collateral benefit to agriculture is the quantity of draff and of manure produced at these works.

At an early date Alloa was conspicuous for the manufacture of bottles; and bottles were shipped from the pier to Leith and other places. At present there are bottle-works, glass-works, paper-works, ship-building, and other industries.

The manufacture of woollen cloths was early begun in the county of Clackmannan, and has greatly increased during the past forty years. Previous to that time the chief articles of manufacture were Scotch blankets and Tillicoultry serges; there are now manufactured yarns, plaiding, shawls, tartans, blankets, tweeds, and sealskins. In Tillicoultry alone there are nine manufactories, besides some small ones. The reason for selecting this place was probably the good quality of the water, and the advantage of a waterfall for driving machinery. At least one of the factories has an elaborate arrangement for purifying the water, constructed at great expense. It works well, and the outlay is at least partly compensated by the manure obtained from the sediment. The wool used at Tillicoultry is chiefly colonial, together with some of the finest Caithness and Ross-shire. The blackfaced wool produced on the adjoining hills is too coarse, and is used chiefly for blankets and carpets. At Alloa, tweeds were manufactured previously, but that has ceased, and the staple manufactures now are yarns. There are two large manufactories, where all sorts of yarn, coarse and fine, knitting, fingering, hosiery, and tweed yarn are manufactured. The manufacturers use Cheviot, Saxony, and colonial wools. At Clackmannan there is a large yarn mill, belonging to Messrs. Paton, Alloa, and it has been built there to get the advantage of fine, pure water.

FISHERIES.

In the county of Kinross is Lochleven, one of the most noted trouting lochs in the country. Within the past twenty years especially it has acquired great celebrity, and is the resort of anglers from all parts of the kingdom, even as far south as London. At an earlier date it was known to possess a peculiar kind of trout which was much valued. It was highly flavoured, and of a bright red colour, believed to be caused by the kind of food obtained in the loch, consisting of small red shell-fish. Previous to 1856 the fish were netted, and it was thought they would not rise to the fly, but in that year angling became successful, and baskets averaging from 20 to 30 lbs. were obtained. The loch became at once a favourite resort for anglers, and the number of boats was increased from two to twelve or fourteen, and now there are from seventeen to twenty boats used for angling purposes. Net fishing for trout has been discontinued. At the close of last century the fishing was let to a tacksman for £100 sterling, and the fish were sold for 4d. a pound. In the spring of 1791 a trout 10 lbs. in weight was caught, and it was not uncommon to get them weighing 8 lbs. and upwards. The tacksman has been superseded by a limited liability company, called the Lochleven Angling Association, consisting of more than two hundred shareholders, with a subscribed capital of £3000. The statistics of recent years are remarkable. "When Lochleven was fished with nets only, the average take of the ten years preceding 1856 was equal to about 11,000 lbs. of trout annually, but it is remarkable that the season of 1850 fell as low as 5844 lbs. The trout caught in the loch during season 1872 numbered upwards of 17,000, and the average weight was nearly one pound. In season 1873 the take was 13,394 trouts, besides baskets not recorded, of which there are a number every year. In 1874 the take was only 6352 trout; in 1875 it was 5060, while in 1876 it was even less. In 1877 the take was 13,319 trout, weighing 8919 lbs.; in 1879 the take was 20,464 trout, weighing 15,634 lbs.; in 1880 it was 19,363 trout, weighing 18,384 lbs.; and in 1881 the number was 16,491, weight 17,253 lbs." In 1882 the number of trout had fallen to 9082, weight 9018¾ lbs., the deficiency being chiefly from the month of July on to the close of the season. Efforts are made by the proprietor and the Association conjointly to maintain the supply of fish; and the Report, dated September 30, 1882, says, "In terms of the arrangement with Sir Graham Graham Montgomery, Bart., for a new lease, the clear balance of last year, amounting to £180, 2s. 3d., was given up to him by the Association for the purchase of young trout. Of that sum the Directors have expended £120, 1s. 3d. in purchasing 3000 two-year old trout, which were placed in the loch, and upwards of 50,000 fry, which were placed in the Gairney. Of the above sum a balance of £60, 1s. remains to be expended, which the Directors propose to apply in a similar way."

THE RECLAMATION OF WASTE LAND ON THE FARM OF TOWIE.

By Alexander Lovie, Towie, Fraserburgh.

[*Premium—Ten Sovereigns.*]

The writer entered upon a lease of the farm of Towie, on the estate of Auchmedden, in the parish of Aberdour, Aberdeenshire, at Whitsunday 1873. The extent of the farm is 440 acres, but of these only 248 were then in cultivation. It was intended to reclaim upwards of 100 acres, the whole of which have now been brought under the plough. The first two seasons were occupied with the building of a farm steading, cottages, and a covered dung court, involving heavy cartages, so that it was not until the harvest of 1875 was finished that operations were commenced upon the waste land. Although these operations are now completed, it is proposed to confine this report to the field (22 acres in extent) on which a beginning was made, with the intention of embracing the remainder in a future report.

The field reported on lies at a height of between 400 and 500 feet above the level of the sea, from which it is distant about a mile and a half. It has a south-easterly exposure, and the subsoil is of a somewhat clayey, but not very retentive nature. The heather on this field had been burned some years before. It is better, however, to burn it twice in succession, with an interval of two years between, as when thus treated the roots decay more readily. Part of the field, measuring 10½ acres, was ploughed with a light furrow, which was made as broad as possible, in order to turn the surface thoroughly down. The ploughed land was afterwards harrowed, and a large number of stones gathered and carted off. Fowler's steam cultivator was next employed to grub eight acres to a depth of 10 to 15 inches, according to the nature of the subsoil. In some places the tines did not enter 5 inches, and a great many breakages took place, the pan being exceedingly hard. After these operations the land was left untouched until the end of 1876, when it was harrowed, and the stones again carted off. It was then drilled up for potatoes, the width of the drills being 30 inches, and the variety Orkney reds. About two acres were so full of heather roots that the cultivator could not work without choking. These two acres were ploughed, and sown with black Scotch hairy oats. Various manures were applied to this crop, at a cost of £2, 2s. per acre, with the following result:—

Per Acre.

	Stooks. No.		Good Grain. Bush.	Inferior Grain. Bush.
Bolivian Guano, .	36	(biggest sheaves) .	24	6
Peruvian Guano, .	74		40½	27
Corn Manure,	48		45	12
Dissolved Bones, .	60		27	21

The other part of the field was now taken in hand. An attempt had been made to plough it with Fowler's steam plough, taking four furrows at a time, but this attempt was unsuccessful. The plough would not enter the ground to a sufficient depth to turn the furrows properly. The attempt might have turned out better if one or more of the plough bodies had been taken off, but this the manager of the company to which the steam plough belonged refused to do. I may be allowed to state here, that from subsequent experience, I give Fisken's steam plough a decided preference for breaking up heather ground for cultivation. The remainder of the field was then ploughed by the common plough, and the Tweeddale subsoil plough, to a depth of 10 or 12 inches. The ground was then harrowed, and, after the stones were carted off, was drilled in the spring of 1878 for potatoes, which were a fair crop, but the tubers were small.

The part of the field, 10½ acres in extent, which had grown a crop of potatoes and oats in 1877, was put under turnips in 1878. It was manured at the rate of 6 cwt. per acre, with Odam's superphosphate. The crop was a poor one, 8¼ acres being valued at £2, 15s. per acre, and 2 acres at £4, 10s. per acre.

In 1878–79 stones were again carted off the field, the cultivated area of which was now increased to 22 acres. Shell sand had been applied to the two divisions of the field, while under potatoes, at the rate of 6 tons per acre, and the application was now repeated at the same rate. The field was now sown out with oats and grass seeds. The oat crop had a very luxuriant appearance, but part of it was "woofed," that is, it had an excessive number of stems, so that it could scarcely be cut by the scythe, and not at all by the reaper, luxuriant leaves, but no grain. There were 16 stacks off the field, but it scarcely yielded 2 quarters per acre of grain.

In 1880 and 1881 the field was under grass, the value of which was estimated, the former year at £3, the latter at £2 per acre.

The annexed table shows a balance against the field of £43, 4s., but against this there is to be reckoned the unexhausted manure, which may be safely valued at an equal or larger sum, as the quantity applied per acre, including the shell sand, has been of the value of from £6, 9s. to £9, 12s. per acre.

A better result would probably have been obtained if there had been a longer interval between the breaking up and the cropping of the ground, but it was desirable that, this being the first field operated on, it should be got into rotation as speedily as possible.

It may also be noted that the various acts of cultivation have been charged at full rates, but part of them have been performed at times when the teams would otherwise have been unemployed. A deduction might reasonably have been made on that account.

The whole of the expenditure on the reclamation of the field has been defrayed by the writer, except the cost of a drain about 400 yards in length, amounting to £3, on which interest at the rate of 5 per cent. per annum is paid by the tenant, the expenditure on the drain having been defrayed by the proprietor. A dyke, 4 feet wide at the bottom, 18 inches at the top, 3 feet high, and 41 chains 17 yards long, was built of the stones carted off the field, at a cost for building of 5d. per yard. As this dyke serves as a fence to another field, in addition to the one reported on, only half the cost, or £9, 6s. 11d., is to be charged against the latter. Were interest at 5 per cent. per annum charged against the field on this expenditure, the adverse balance would not be increased to the extent of £1.

The following is an account of the expenditure in bringing the field into cultivation, and of the receipts therefrom :—

		Per Acre.	
	8½ Acres Potatoes.		
1877.	To first ploughing,	£0 15 0	
	„ Harrowing,	0 4 0	
	„ Gathering and carting stones,	0 10 0	
	„ Steam cultivating,	0 8 6	
	„ Harrowing,	0 2 0	
	„ Gathering and carting stones,	1 0 0	
	„ Shell sand and carting, 6 tons,	2 11 0	
	„ Drilling for potatoes,	0 5 0	
	„ Seed potatoes and planting,	1 14 0	
	„ Potato manure, 6 cwt. at 10s.,	3 0 0	
	„ Hoeing and horse labour, 3-horse subsoil,	0 10 0	
	„ Digging and gathering,	0 14 6	
		£11 14 0	£99 9 0
	2 Acres Oats.		
	To first ploughing and harrowing,	0 19 0	
	„ Gathering and carting stones,	0 10 0	
	„ Second ploughing and harrowing,	0 9 6	
	„ Seed, 6 bushels, sowing and rolling,	1 1 6	
	„ Manure,	2 0 0	
	„ Shell sand and carting, 6 tons,	2 11 0	
	„ Harvesting,	0 15 0	
		£8 6 0	16 12 0
	10½ Acres Turnips.		
1878.	To drilling,	£0 5 0	
	„ Odam's superphosphate, 6 cwt.,	1 10 0	
	„ Sowing manure and closing drills,	0 6 0	
	„ Seed and sowing,	0 4 0	
	„ Hoeing and cleaning,	0 10 0	
		£2 15 0	28 12 6
	Carry forward,		£144 13 6

	8½ Acres Potatoes.	
1877.	By 4½ tons per acre—38¼ tons at 30s.,	£57 7 6
	2 Acres Oats.	
	By Oat crop, at £5 per acre,	10 0 0
	10½ Acres Turnips.	
1878.	By 8½ acres at £2, 15s. per acre,	23 7 6
	„ 2 acres at £4, 10s. per acre,	9 0 0
	Carry forward,	£99 15 0

	Brought forward, ...		£144 13 6
	9 Acres Potatoes.		
1878.	To First ploughing and subsoiling, ...	£3 0 0	
	„ Harrowing, ...	0 4 0	
	„ Gathering and carting stones, ...	0 10 0	
	„ Drilling, ...	0 5 0	
	„ Shell sand and carting, 6 tons, ...	2 11 0	
	„ Seed potatoes and planting, ...	1 14 0	
	„ Manure, 6 cwt., ...	1 7 0	
	„ Hoeing and horse labour, ...	0 10 0	
	„ Digging and gathering, ...	0 14 6	
		£10 15 6	
			96 19 6
	22 Acres Oats.		
1879.	To Gathering and carting stones, ...	1 0 0	
	„ Ploughing, ...	0 10 0	
	„ Seed, sowing, harrowing, rolling, ...	1 3 6	
	„ Grass seeds and sowing, ...	0 10 6	
	„ Shell sand and carting, 6 tons, ...	2 11 0	
	„ Harvesting, ...	0 15 0	
		£6 10 0	
			143 0 0
	22 Acres Pasture.		
1880.	To Interest on money expended on drainage, £3, at 5 per cent., ...	0 3 0	
			0 3 0
1881.	„ Do. do. do.	£0 3 0	
			0 3 0
			£384 19 0

	Brought forward, . . .	£99 15 0
	9 Acres Potatoes.	
1878.	By 4 tons per acre—36 tons at £2, ...	72 0 0
	22 Acres Oats.	
1879.	By 40 qrs. corn and fodder, at 30s., ...	60 0 0
	22 Acres Pasture.	
1880.	By value estimated at £3 per acre, ...	66 0 0
1881.	By value estimated at £2 per acre, ...	44 0 0
	By balance, ...	43 4 0
		£384 19 0

THE OLD AND REMARKABLE ELM TREES IN SCOTLAND.

By Robert Hutchison of Carlowrie.

[*Premium—Ten Sovereigns.*]

In discussing and passing in review the old and remarkable elms in Scotland, we must follow the course adopted by Loudon, and consider the various species or varieties of the *Ulmus* family as referable to two distinct types, viz., *Ulmus campestris* and *Ulmus montana;* the former being the variety popularly known as the English or small-leaved elm, and the latter, the mountain wych or Scotch elm.

To the arboriculturist the elm family has been a source of much speculation and doubt, considerable uncertainty prevailing amongst the best authorities in dendrology as to what should be regarded as distinct species, and what only as varieties. As many as five species have been suggested as forming distinct groups of the elm family in Britain, viz., *Ulmus campestris, Ulmus tuberosa, Ulmus major, Ulmus montana,* and *Ulmus glabra.* To distinguish between these is frequently very puzzling; and as throughout Scotland the elm is popularly known where planted, only as the Scotch or English elm, we may dismiss any attempt to unravel from the statistics of the old and remarkable specimens, we are enabled to describe and append to this chapter, whether they belong to any of these doubtful sub-varieties, but treating them simply as old and remarkably large or historically interesting trees, consider them as elm trees of the two families we have indicated, and unless where in the statistical table they are stated to be the *Ulmus campestris* or English elm, mention in this chapter may be taken as being made only to the Scotch or wych elm (*Ulmus montana*). Our thus ignoring as distinct varieties the others we have named, is, in a paper dealing with the old and remarkable specimens of elm throughout the country, of the less consequence, when we state that much of the supposed difference in species or variety, apart from the two distinct branches we propose to adhere to, arises from the fact that the seed of the elm tree almost never proves quite true to the parent from which it is taken, but produces endless "sports," alike in leaf, habit, and colour of foliage from the parent plant, according to soil and situation.

In adhering to Loudon's two distinct types, their differences may be popularly explained in very few words, and the distinctions will be apparent at once to the most untutored eye in arboriculture. The *Ulmus campestris* and its varieties are chiefly remarkable for their smaller leaves, and by a persistent tendency to throw up suckers from the roots, which is a very sufficient compensation, in the propagation of the species, against the liability it has in many cases of producing very imperfectly formed or immature seeds. On the other hand, the Scotch elm (*Ulmus montana*) seldom produces any suckers from its roots, and is almost invariably loaded every season with a profusion of perfectly formed and prolific seeds. This distinction may lead to the inquiry whether any or either of the two families of the elm tribe may be considered as indigenous to the British climate.

On this point arborists are pretty well agreed, that whatever doubt may be suggested regarding the indigenous origin of the English elm (*Ulmus campestris*), there can be no hesitation in pronouncing the Scotch elm, or wych elm, as it is frequently termed,—which name is itself indicative, from its origin, of the tree's existence and wide dispersion in this country in early Anglo-Saxon times,—to be a native of the British islands. It is not so frequently found in the southern parts of England, but its geographical area of cultivation increases as we proceed northwards; and in Scotland in most districts, but chiefly in the alluvial loamy straths,or in the sheltered glens of the higher altitudes, it abounds in quantity, and forms in the more richly wooded districts of Scotland generally a notable feature in most plantations. *Ulmus campestris*, on the other hand, is more generally found in the southern and midland counties of England, and in the neighbourhood of populous cities or large towns, and along the banks of the Thames, Severn, and such rivers, where probably its more upright and loftier head, and better habit of growth, have recommended it in preference to, and probably to the extinction of, the other species, whose habit of growth is much more irregular and straggling—a characteristic which precludes its use in many situations for ornamental purposes, although where space can be afforded for its large spreading head, which frequently loses its central column or bole at no very great height from the ground, there can be no doubt that it becomes generally a far more picturesque tree than its English ally. Gilpin and his cultured editor, Sir L. Dick Lauder, both considered the wych elm as "one of the most beautiful trees in our British sylva. The trunk is so bold and picturesque in form, covered, as it frequently is, with huge excrescences, the limbs and branches also are so free and graceful in their growth, and the foliage is so rich, without being heavy or clumpy as a whole, and the head is generally so finely massed, and yet so well broken, as to render it one of the noblest of park trees, and when it grows wildly amid the rocky scenery of its native Scotland, there is no tree which assumes so great or so pleasing a variety of character; our associations with it in such scenes lead us to prize it highly." The wych elm, like its fellow the English elm, is found to attain only its full dimensions, and to thoroughly develop its peculiar characteristics, in deep loamy soil with a cool, dampish subsoil, free from stagnant water, and in such situations noble old examples may be found, although in our investigations for old and remarkable specimen elms we have been struck with the rareness with which really very large old examples now occur, in comparison with the frequency with which many similar instances of remarkable trees of other descriptions are to be found and recorded in Scotland.

This scarcity of instances of old or remarkable elms extant at the present day in Scotland, may perhaps be accounted for from the fact of its being an indigenous tree of very rapid growth in suitable soils and situations during the early years of its career in the plantation, which, taken along with the value of its timber for so many rural purposes when it has attained large size, may have proved inducements to proprietors, in an age when less attention was paid to the conservancy of fine old trees, to lightly estimate so common a tree as the Scotch elm for ornament, and so to fell the most useful and matured timber, relying on the rapidity of the early growth of the younger individuals to fill its place within a reasonable period. Consequently, during the past century very many noble examples throughout the country have been lost to record, while in almost every mixed plantation in Scotland formed within the past century, and without the slightest regard to suitability of soil, subsoil, or situation, or the characteristic habits of the tree, elms have been largely planted, many of which, from circumstances inimical to their growth, have, after years of trial, failed to supply worthy successors to the giants of a former period.

Another evil consequent upon such promiscuous planting with trees unsuited to mixed plantations or to particular soils has been, that by many planters the elm is now looked upon with suspicion, from its unruly nature of growth in young woods, destroying, by its shadow and long wide-spreading fan-like young limbs, the other varieties of hardwoods of slower growth. Thus, the older trees of elm, when required for timber, have had to be fallen back upon during the past half century, rendering it at the present day comparatively difficult to find a stately tree of great dimensions and scantling in many localities.

Our old friend Dr. Walker—whose subjects given in his catalogue of old remarkable trees, issued about the beginning of the present century, we have in these chapters on the existing old and remarkable trees in Scotland, attempted most carefully to identify, and in every instance, if possible, to record their present measurements at the same points as those which he recites—only notices *five* old and remarkable elm trees; and these he classifies as "*Ulmus campestris*," or "Scots elm," which is an evident mistake for the *Ulmus montana ;* and, excepting in one case, none of these trees can be regarded as in any way remarkable. The exception we refer to is the elm, in the parish of Roxburgh, called the "trysting tree," which in 1796 was measured, and found to be in circumference, at 3 feet from the ground, 30 feet. The next largest elm he records is that at Newbattle Abbey, Mid-Lothian, which, in July 1789, measured at the same point, 10 feet 4 inches in girth. The other three elms recorded by Dr. Walker are two which grew in the old College Gardens at Glasgow, and which girthed in 1764 8 feet 5 inches and 9 feet 5 inches respectively at 3 feet from the root; these are now no more, though, when or how they succumbed and went over to the majority, no one has recorded, and the remaining tree he mentions in his remarkable group is the elm, "north from the house of Drumlanrig in Nithsdale," which, on 23rd April 1773, girthed 9 feet 4 inches. If our reverend friend could only find such poor examples of elm trees to enrich his otherwise admittedly very accurate catalogue, the absence of big elms in his day must have been very marked indeed, as contrasted with the many more interesting and larger specimens he cites of almost every other description of hard-wooded trees in Scotland. It must also be borne in mind that Dr. Walker was a very keen and vigilant observer, and his sharp eye and ready pen could not fail to detect any unusual tree, which he might happen to stumble upon or hear of, in his long and painstaking investigation. That there were few notably gigantic trees of the elm tribe in his day, may be inferred from the note he appends to the dimensions he gives of the "trysting tree" in Roxburgh parish, viz.: "Though," says he, "Scots elm abounds with us, both in natural woods and plantations, yet in England, where it is called the Wych Elm, it is often to be seen of a much larger size."

Recent inquiries at the parish minister of Roxburgh, as to the existence and condition at the present day of the well-known "trysting tree" there, elicits the reply, that upon inquiry he has been able to state that this tree no longer exists except in the memory of some old people, but how or when it disappeared, he has not been able to discover.

The earliest, and probably the most generally adopted, mode of planting the elm in Scotland, appears to have been in hedgerows for shelter and along roadsides. Its rapidity of growth in its early years, and its capability of being cut in with impunity when its large branches interfered in any way with adjoining objects, rendered it desirable in such situations, and for the same reasons its use as an avenue tree in many localities became generally adopted. Indeed, in other countries as well as in our own, the suitability of the elm for avenue and roadside planting was at an early period recognised. In France, it was known and used as an ornamental tree as early as the time of Francis I.; and it was first used there to adorn the public promenades about 1540. Afterwards we find it used, in the reign of Henry IV., as a *churchyard tree* to a large extent, though why, does not appear, unless its selection for such situations was only for the replacement of older trees which had probably perished; or perhaps from old associations with such sites, for we know that in the early ages of Christianity, the hunters were accustomed to hang the skins of wolves they had killed in the chase upon the elms in the churchyard, as a kind of trophy.* According to Evelyn, it appears that Henry IV. of France expressed a wish that all the highways in that country should be planted with rows of elm trees, and thus it soon became the favourite tree for planting along promenades and hedgerows. Its use for this purpose probably was to afford shelter and concealment, in its umbrageous head and wide-spreading limbs and dense leafage, to soldiers during warfare or foray; for Bosc mentions elm trees in Burgundy of immense size, which, though hollow and decaying in their trunks, "yet supported heads capable of sheltering some thousands of men." For town planting the elm is very often used, even at the present day in Scotland, but it is not so well adapted for introduction with success in the smoky atmosphere of large cities or towns as the plane or sycamore.

From reference to the accompanying appendix of statistics of old or remarkable elms, it will be observed that the tree accommodates itself and thrives in many different soils and situations, and although it does not attain the same dimensions as a timber tree at lofty altitudes, still even in these it does well, and may be seen flourishing, although, of course, of less noteworthy size than in lower and more congenial sites. The soil in which its timber attains most value is a sandy deep loam, overlying a cool rock or gravel subsoil. Although it is very impatient of stagnant or water-logged substrata, it is often seen in Scotland of large dimensions by the banks of streams, which almost lave its very roots. In wet, or tilly clay, it will not succeed, but it is often found, in a natural self-sown state, thriving, and of considerable girth, amongst rocky "denes" or "glens," where there is almost no depth of soil to mention, overlying the porous rock.

Loudon mentions that the largest trees which are known certainly to belong to the species *Ulmus montana* are supposed to be in Scotland; and before referring more particularly to those now measured, and given in detail in the appendix to this chapter, as existing large trees at the present day, we may notice those given by him as being notable examples of large elms in 1836, or about that date; several of which we have again identified, re-measured, and referred to in the present appendix. On the estate of Castle Huntly, Perthshire, Loudon notices several fine Scotch elms, which then, at 3 feet from the ground, girthed 11 feet. These have now, unfortunately, along with most of the fine old timber on this estate (many of the trees having been *very fine* specimens), been ruthlessly cut down for sale. They have been recorded in regard to dimensions during their life, but no information now exists of their sizes at the time of their assassination and premature death. At Aberdour, Fife, on 10th March 1812, a fine elm girthed 11 feet 6 inches at 3 feet up, and had 40 feet of clean bole. Two elms at Yair, Selkirkshire, girthed at the ground 13 feet. At Taymouth Castle, Perthshire, in September 1814, an elm measured 15 feet 9 inches, at 3 feet from the ground. A curious fantastic elm tree, remarkable for its quaint and weird-like boughs, grew at Touch, Stirlingshire, but has since, unrecorded, we have ascertained, been allowed to depart this life. At Polloc, in Lanarkshire, there are some fine wych elms referred to by Loudon, and still extant. One of these, figured by Strutt in 1812, was then 86 feet high; but in October 1839, when again measured, was found to be 90 feet high, and to have a circumference of 12 feet at 5 feet from the ground. Other three trees growing there were then nearly as large, and one of them, which tradition asserts to have been planted by Sir Thomas Maxwell, Lord Advocate of William III., and one of the commissioners of the Union, was planted in commemoration of that event. At Kinfauns, in Perthshire, is a fine elm (says Loudon) 70 feet high, with a circumference of trunk of 19½ feet, and with a spread of branches covering a diameter of 60 feet. At Airthrey Castle, Stirlingshire, Loudon found a fine tree 63 feet high, 12 feet in girth at 3 feet; and again at Callendar Park, Stirlingshire, he records one 46 feet in height, with a circumference of trunk at 3 feet, of 15 feet, and with a spread of branches of 66 feet diameter.

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* The planting of the elm trees around churchyards in the Middle Ages may have some reference to the old mythology of the Greeks and Romans, who looked on all *barren* or non-food-producing trees as *funereal* trees. Thus, we find ash, elms, lime, &c., used in such situations, but never beech, walnut, or even *oak*.

Having thus far noticed the recorded elms in Scotland of a past date, we hasten to consider those of the present day throughout the country, many of which are tabulated in the appendix, and shall notice in passing such as may still be identified as trees already mentioned in these pages, and referred to as belonging to Walker's or Loudon's catalogue.

In the more northerly counties of Scotland we find many fine examples of the elm, growing in luxuriant vigour and of notable dimensions. At Darnaway, in Morayshire, Brodie Castle, Dalvey, and other places in the same county, there are splendid specimens of this, as of most other hard-wooded trees. In addition to the tree recorded in the appendix from Brodie Castle, there are to be seen many other even more imposing trees growing in the park, but unfortunately no very accurate measurements of them could be obtained, owing to their having thrown out such masses of suckers around their trunks, and owing to their being otherwise much swollen in the *root-cuts* of their boles by immense burr-like excrescences. The examples given from Darnaway, and which girth about 15 feet at 1 foot from the ground, and from 12½ to 14½ feet at 5 feet from the base, cannot be more than about 210 years old, for in August last we had an opportunity of carefully examining and counting the annular rings upon the section of a root-cut of one of the trees cut in the plantation where those are growing, which are referred to in the appendix, and it was found to contain 207 annual rings. This section measured 3 feet 6 inches in diameter in one direction, and 3 feet 10 inches in the other. From a meteorological point of view, this inspection of the tree section was very interesting, the narrow or broad width of annual rings in each successive year clearly showing *the dry* or *non growth-producing summers,* as contrasted with those seasons favourable to annual growth of wood. Reckoning back from the date of the tree's fall, the various seasons might be found from *these rings* to compare most minutely and accurately with the most carefully prepared calendar of the seasons by the most intelligent meteorologist.

On the estate of Gordon Castle, Morayshire, are some very interesting and remarkable trees of many varieties, but amongst the elms may be noted a fine old avenue of this variety running through the park to the front of the castle, the space between the stems being 74 feet. It is generally considered that this avenue is upwards of 300 years old, and that the trees composing it are amongst the oldest in the grounds. The following are some of their average girths:—

22 feet 3 inches, at 1 foot from ground.
16 feet 2 inches, at 5 feet „
60 feet height.
Circumference of spread of branches, 243 feet.

The scarcity of groups or masses of remarkable elms in Scotland is nowhere more conspicuous than in the northern districts, for, while in Aberdeenshire, Inverness, Sutherland, Ross, Moray, Banff, and Nairn, a single fine and majestic tree may be stumbled upon now and again, it is impossible to find them of any noteworthy size in quantity, while in some of those counties named it is often a long day's journey from one good specimen before the investigator can find another. As an example of the weeping elm variety, no doubt the finest tree in Scotland exists at Blackfriars Haugh, in Morayshire; its height exceeds 30 feet, while in circumference it is 4 feet 6 inches at 1 foot from the ground, with a diameter of spread of branches of 108 feet. Other fine specimens of this variety exist in Ayrshire, but although perhaps somewhat thicker in girth, they cannot compare in point of symmetry, height, or general outline with the Morayshire specimen. They are to be found at Orchardhill Nurseries, Kilmarnock, where it is 4 feet 6 inches in girth; and at Kinyeancleuch, Ayrshire, where the specimen has attained a circumference of stem of fully 5 feet. These, however, cannot boast the same tall head or umbrageous diameter of branches of the northern tree.

At Brahan Castle, Ross-shire, where we have had occasion in previous papers to notice the salubrity of climate, soil, and exposure as most conducive to tree development, and where many noble specimens of hard-wooded giants exist, we found an elm growing at an altitude of 110 feet, 85 feet in height, with a girth of 19 feet 8 inches at 1 foot and nearly 13 feet at 5 feet above ground. This tree has made 8 inches of wood since its previously-recorded measurement in 1869.

At Strontian, in Argyllshire, is a very noteworthy Scotch elm, planted, it is said, by Lady Janet Cameron of Dungallon. It is only 6 feet above sea-level, and stands in a light clay soil, upon a sandy subsoil, and has attained a height of 63 feet, with a circumference of 21 feet and 15 feet 2 inches at 1 and 5 feet respectively, and has a diameter of spread of branches of no less than 120 feet. The tree is locally known by the name of its noble planter, "Lady Janet." The name is at all events not very common, and history records no other distinction of this noble lady. Can she have had anything to do with the planting of another Scotch elm at Carronhall, Stirlingshire, which also bears the soubriquet of "Lady Janet," and is a tree of about the same age apparently as that at Strontian, being now 85 feet high, and girthing 18 feet 2 inches at 5 feet from the ground, in a clay loam soil, or clay subsoil? This point the family historiographer, and not the arborist, alone can decide. The Kinnaird elms, growing on the South Esk estates in Forfarshire, are notable specimens. Reference to the appended details will show that four of these trees give an average girth of 13 feet 6 inches at 5 feet above ground, while two of the four exceed 14 feet at that point.

In Perthshire, as might be expected, many noble elms are met with. Those in the park of Castle Menzies are in no way inferior to the other varieties of splendidly developed hard-wooded trees which have been already noticed in that locality. At Dunkeld there are perhaps fewer elms of large size than may be seen of other hard woods; but two are notable examples of finely grown Scotch elms. These will be found in the appendix, and one is styled "*The Highlandman's Bonnet*," and is said to have received this name from an enthusiastic son of the north having fetched it, when a seedling, as a sprig in his glengarry bonnet, and planted it on the occasion of his taking service in the Dunkeld woods or gardens. It is now 73 feet in height, and nearly 13 feet in girth at 5 feet from the ground. The other fine elm in this site is between the entrance gate from Dunkeld and the gardens, and is 15 feet 4½ inches in circumference at 5 feet from the ground. It is a most imposing and majestic tree. At Strathallan are some interesting and large old Scotch elms, one of which is 19 feet 2 inches in girth at 1 foot above ground, and 15 feet 9 inches at 5 feet. It grows in black loam on a sand and gravel subsoil. At Moncrieffe, near Perth, there are some fine large elms. One given in the appendix is 20 feet 6 inches in girth at 1 foot, and 14 feet 10 inches at 5 feet from the base. The difference in girth between these points is largely accounted for by a good deal of vacant space about the lower part of the base of the trunk and roots. Another remarkable Scotch elm there should not be overlooked, not only on account of its great dimensions, but also for the peculiarity of its assumed form and growth. At some early period of its youth, it appears to have been rent through the centre, and formed a sort of archway through which a full-grown person could easily pass. Thus weakened, the tree was unable to bear the superincumbent weight of the head when in foliage, and toppled over. Notwithstanding this mishap, the tree has continued to flourish on as luxuriantly as ever, and, banyan-like, has fixed and rooted many of its drooping branches in the soil, thus presenting a most remarkable and picturesque effect.

At Kinfauns Castle, Perthshire, growing in a light loam upon a gravelly clay subsoil, upon a sloping bank at an elevation of 72 feet, there is a very picturesque rugged Scotch elm. It is now 23 feet 2 inches in circumference at 1 foot, and 19 feet 3 inches at 5 feet above the ground. Its beauty consists not only in its curiously gnarled trunk, but also in the wonderful formation of all its branches, the smallest of which forms a perfect model of the whole tree. At about 7 feet from the ground, it branches out into two large limbs, the circumference of which are 11 feet 6 inches and 9 feet 9 inches respectively.

At Blairdrummond there is a group of trees, which, although not remarkable for size, are worthy of notice from their association with the name of their eminent planter. The group consists of two sycamores, a laburnum, and elm, and are called "Franklin's trees," having been planted by the hands of Benjamin Franklin himself, when on a visit to Lord Kames at Blairdrummond. The elm is now 60 feet high, with a fine bole of 22 feet, and girths 9 feet 10 inches and 7 feet 10 inches at 1 and 5 feet respectively. Lord Kames died in 1782, so that this tree is at least over 100 years old. Many other interesting elms in Perthshire might be referred to, but notice perhaps had better be confined to three only. The first is an old elm at Balthayock, near Perth, which gives a very striking representation of the proneness of the elm when injured in the upper stem to any severe extent, or when pollarded, to throw out huge wart-like excrescences, or " burrs," from its trunk. The measurements of this tree are not stated. The next is a fine and picturesque Scotch elm of characteristic type and habit, growing in healthy vigour at Freeland, Perthshire. It girths 16 feet 2 inches at 1 foot and 14 feet 9 inches at 5 feet above ground, and is only one of many others of similar dimensions growing in that locality. The habit of the elm to assume often a pendulous or weeping habit, is well shown in this tree. This remarkable and very distinct habit could hardly be better illustrated than in the case of this specimen, which stands on the roadside near Dunkeld, and is in a very healthy and thriving condition. This tree must not be considered an example of the variety usually known as the "weeping elm" (*Ulmus montana pendula*), but rather as an instance of the aptitude of the elm in its different species to vary from seed, to which reference has already been made in the commencement of this chapter. Good examples of the suitability of the elm to thrive at lofty altitudes in Scotland are given in the cases enumerated in the appendix, from Cleish Castle, Kinross-shire, where we find it growing at from 550 to 600 feet above sea-level, in a clayey soil, and attaining 86 feet in height, with a bole of 18 feet, and girthing 12 feet 8 inches and 10 feet 10 inches at 1 and 5 feet above ground.

At Grangemuir, in Fife, there is an interesting group of trees, composed of ash and elms. One average elm there girths 10 feet 7 at 1 foot from the ground. It stands near the old ash, about 100 yards from the site of a former mansion-house, and is popularly believed to be haunted by a ghost called "Baff Barefoot." Whose spirit this weird apparition was supposed to be, tradition has not preserved; but it must be an old story, for it was narrated by the father of the ex-curator of Kew Gardens, who was gardener at Grangemuir in 1812 to 1815, to his son many years ago, and who in his own quaint way said, "By all young folks o' the place it was reckoned unco' uncanny to pass by thae' trees after 12 o'clock at nicht!" The ash tree was particularly looked upon as the haunt of Baff Barefoot. It is older than the elms, and for many years was falling into a state of gradual decay, until Mr. Rose, the present gardener, wisely had a mound of fresh soil formed over its exposed roots and round the base, which has resuscitated its failing energy, and many fresh young twigs thus encouraged are now forming into branches, and clothing the veteran with healthy foliage.

South of the Firth of Forth, and generally in the southern counties of Scotland, there are more large elm trees to be found than in the northern division of the country. This probably arises from the more general custom of planting mixed plantation of hard-wood timber which is practised. In the north the Firs, or Coniferæ, alone usually prevail, this system having proved more remunerative and better adapted to the physical features of the Highlands. In many of the fertile and rich heavy loam districts bordering on the Firth and Clyde, fine majestic elms may be found. At Airth Castle, Stirlingshire, there are some noble specimens. One of these, mentioned in the appendix, is 80 feet in length, and measures 14 feet 2 inches and 12 feet 10 inches in girth, at 1 and 5 feet up, and 11 feet 2 inches at 20 feet from the base. It is only 60 feet above sea-level. At Carronhall, also in Stirlingshire, "Lady Janet," already referred to in connection with an elm bearing the same name at Strontian, is 85 feet in height, and girths 18 feet 2 inches at 5 feet from the base. The elm at Polloc (Renfrewshire), given in the appendix, is perhaps one of the tallest and most perfect specimens in Scotland. It has long been a well-known and universally admired tree. It is figured by Strutt in his admirable and beautiful *Sylva Britannica.* This tree stands in a group of equally remarkable wych elms; and, thanks to the intelligent and praiseworthy interest taken in his ancestral trees by the late Sir John Maxwell, we have accurate records of its progress in growth. At 5 feet from the ground it measured in circumference, in 1812, 10 feet 10 inches; in 1836, 12 feet; in 1842, 12 feet 4 inches; in 1858, 13 feet; in 1862, 13 feet 4 inches; and in 1872, 13 feet 10 inches; and in 1881 it girths 14 feet 8 inches at the same point. In 1824 Strutt records its height as being then 88 feet, and he states that the tree then contained 669 solid feet of timber. The Barr Castle elm (Ayrshire) has long been distinguished as the largest elm and indeed the largest tree in Ayrshire. The last records of its dimensions show it to be then (1879) 27 feet in girth at 1 foot, 16 feet 4 inches at 5 feet, and 16 feet at 6 feet from the ground. Its bole is not long, but very gnarled and knotty, presenting a very picturesque appearance. Its branches in its pristine vigour seem to have been numerous, and apparently very large. One of them, it is recorded, was broken off by a heavy gale of wind in 1801, and was sold for five pounds sterling! This veteran, though still alive, is showing every symptom of extreme old age. It is locally known as "the boss tree." Turning to the eastern districts of the lowland counties, we find many massive specimens of Scotch elms, but in these districts there is a larger sprinkling of the English elm (*Ulmus campestris*) than in the other parts of Scotland, and many of these are also worthy of notice for their huge proportions and healthy vigorous growth. Some years ago a Scotch elm was blown down at Blackadder (Berwickshire), which was 24 feet 3 inches in girth at 5 feet from the base, and this tree by popular report was generally admitted to be the largest tree in the district. On Marchmont (Berwickshire), there are many fine elms near the famous Spanish chestnuts, which are so conspicuous a feature in this well-wooded estate; several of these are given in the appendix. They grow at a high altitude (viz., 500 feet), in a strong red clay soil, upon hard till. On the estate of Ninewells, adjacent, there is a magnificent tree 13 feet 7 inches in girth at 5 feet up; and at Duns Castle, not far distant, there are several handsome and large specimens also. At Kimmerghame (Berwickshire), we have recorded some large trees, and in the appendix will be found a noble specimen of the English elm (*U. campestris*), girthing 13 feet at 3 feet from the ground. This tree has unfortunately perished in the recent memorable gale of 14th October 1881. Very many other magnificent trees of all varieties of hardwood in this district have been totally destroyed and overturned by the same sad hurricane, which seems to have inflicted more calamitous injury upon Berwickshire and East Lothian than upon any other locality. In East Lothian, at Yester, Biel, Whittinghame, Belton, and Tynninghame, along the valley of the Tyne, there are many large and noble elms, several of which will be found on reference to the Appendix of Returns, but of which space will not permit our giving more detailed notice at present. There is a fine mixed avenue of elms and beeches at Ormiston (East Lothian). These trees were planted in the beginning of last century by the celebrated John Cockburn. He was proprietor of Ormiston, and one of the first improvers of Scottish agriculture. He was born about 1685, became a member of the Scottish Parliament, and took an active part in the proceedings connected with the Union of Scotland and England. He afterwards represented Haddingtonshire in the British Parliament from 1707 to 1741; and these elms and beeches are said to have been planted to commemorate the Union of the two countries. This style of disposing elms in long colonnade-like rows is frequently met with in this and adjoining counties. It was very common about the beginning of last century. A fine example of it may be seen in the parks around Seton Chapel (East Lothian), where some of the old and stately elms so planted still survive, and continue to flourish, under whose leafy canopy, perchance, lofty and ambitious resolves were cherished, while still the name and fame of the house of Winton was unsullied, and its wide and fair possessions held in sway.

APPENDIX.—DESCRIPTION OF THE

County.	Place.	Altitude above Sea-Level.		Soil.	Subsoil.	Exposure of Site.
		Ft.	in.			
Aberdeen,	Keithhall,	100	0	Deep loam,	Clay,	E.
"	Philorth,	40	0	Loamy,	Clayish,	N.E.
Moray,	Brodie Castle,	...		Black sandy loam,	Sand and slight clay,	N.E.
"	"	...		"	"	...
"	Dalvey	...		Light loam,	Sand and gravel,	...
	Darnaway,	...		Light loam,	Gravelly,	...
,	"				"	...
,	,	...		"	"	...
"	Altyre,	...		"	"	...
Ross,	Brahan	110	0	Good loam,	Strong clay,	...
"	"	...		"	"	...
Argyllshire,	Strontian,	6	0	Light clay,	Light sandy,	...
Forfar,	Kinnaird,	30	0	Deep sandy loam,	Gravel,	...
"	"	30	0		"	...
"	"	30	0	"	"	...
"	"	30	0	"	"	...
	Gray,	180	0	Black loam,	Sand and gravel,	...
Perth	Castle Menzies,	250	0	Light loam,	Gravel,	...
"	"	...		"	"	...
"	"	...		"	"	...
"	Dunkeld	...		Light loamy soil,	Gravelly,	...
"	"	...		"	"	...
"	Castle Huntly,	...		Good heavy loam,	Clay,	...
"	Moncrieffe,	...		Light loam,	Gravel,	...
"	Strathallan,	200	0	Black loam,	Sand and gravel,	...
"	"	...		"	"	...
	Kinfauns,	70	0	Light loam,	Gravelly clay,	S.
	Blairdrummond,	50	0	Light thin soil, inclining to clay,	Gravel,	S.W.
"	"	...		Sand and gravel,	Clay,	...
"	"	...		"	"	...
"	Drummond Park,	...		Clayey loam,	Gravel and clay	...
"	"	...		"	"	...
"	Muthill,	...		"	"	...
"	"	...		"	"	...
Clackmannan,	Tillicoultry,	...		Light loam,	Clay,	...
Kinross,	Cleish Castle,	550	0	Clayey,	Clay and gravel,	...
"	Lochleven Castle,	...		Light loam,	Clay and gravel,	...
Fife	Otterstone,	100	0	Good loam,	Sandy gravel,	...

BRITISH ELMS (*Ulmus campestris* and *U. montana*).

Height of Tree in Feet.	Length of Bole in Feet.	Present Circumference of Trunk at			Any former recorded Measurements and Dates.			Diameter of Spread of Branches	REMARKS.
		1 Foot.	3 Feet.	5 Feet.	Date.	At 1 Foot.	At 3 Feet.		
Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.		Ft. in.	Ft. in.	Ft. in.	
55 0	15 0	10 4	...	8 11	...	...	...	...	An example of about 100 trees in site.
72 0	21 0	13 0	...	8 2	...	...	...	...	
78 0	...	13 2	11 1	...	...	...	...	...	Planted about 1680.
75 0	...	12 10	...	10 0	...	...	...	...	
73 0	...	19 6	...	12 1	...	...	...	...	
91 0	12 0	15 4	...	14 0½	...	...	...	...	In September 1879 it girthed 15 ft. at 1 ft., and 14 ft. at 5 ft. from the ground. A most majestic tree.
95 0	24 0	14 10½	...	12 6	...	...	...	...	In September 1879 it girthed 14 ft. 8 in. at 1 ft., and 12 ft. 2 in. at 5 ft. from the ground. A most majestic tree.
88 0	14 0	15 0	...	12 6	...	...	...	...	
71 0	15 6	14 9	...	12 5	...	...	...	...	In a fine mixed avenue of lime, beech, ash, poplar, elm, &c., in straight line, and 1 mile in length.
52 0	...	...	...	14 2	...	...	...	...	
85 0	...	19 8	...	12 9	...	..	...	...	Girthed 19 ft. at 1 ft. up in 1869.
63 0	...	21 0	...	15 2	...	...	...	120 0	Planted by Lady Janet Cameron of Dungallon.
62 0	40 0	15 2	...	14 3	...	...	..	...	
51 0	27 0	15 8	...	14 1	...	...	...	...	
63 0	36 0	13 10	...	12 6	...	...	...	...	
61 0	40 0	12 7	...	13 2	...	...	...	...	
73 0	15 0	16 7	...	12 8	...	...	...	...	Contains 275 cubic ft. of timber, and is probably 140 years old.
74 0	0	20 5	15 7½	14 8	...	...	...	...	On roadside at Camserney Mill.
77 0	35 0	18 10	15 2	14 6	...	...	...	...	Very handsome and imposing trees.
68 0	18 0	15 8	12 8	11 10					
73 0	...	...	...	12 10	...	...	...	...	Called here "The Highlandman's Bonnet" — a very handsome tree.
68 0	...	...	...	15 4½	...	...	...	...	Between entrance gate and garden.
80 0	...	17 2	...	16 0	...	...	...	...	A handsome tree, but much branched.
73 0	...	20 6	...	14 10	...	...	...	...	
65 0	18 0	19 2	...	15 9	...	...	...	...	
70 0	20 0	18 1	...	14 8	...	...	...	...	
92 0	...	23 2	...	19 3	...	...	...	...	
60 0	22 0	9 10	...	7 10	...	...	...		Grows in "Ben. Franklin's Clump."
60 0	16 0	16 2	...	14 1	...	...	...	...	
70 0	18 0	14 9	...	11 8	...	...	...	...	
71 6	17 6	16 4	...	13 2	...	...	...	69 0	
50 0	7 6	14 4	...	13 2	...	...	...	85 0	
72 0	15 0	16 4	...	10 6	...	...	...	63 0	
63 0	19 0	18 7	...	13 10	...	...	...	90 0	A majestic tree.
73 0	...	19 3	...	12 5	...	...	...	...	
86 0	18 0	12 8	...	10 10	...	...	...	...	
65 0	18 0	...	...	9 10	...	...	...	...	
90 0	46 0	...	...	14 11	...	...	...	...	

DESCRIPTION OF THE

County.	Place.	Altitude above Sea-Level.	Soil.	Subsoil.	Exposure of Site
Fife,	Grangemuir,	100 0	Stiff loam,	Clay,	...
Stirlingshire,	Carronhall,	92 0	Clay loam,	Clay,	...
"	Airth,	60 0	"	Clay and sand,	...
Argyll,	Inveraray,	25 0	Brown loam,	Sandy gravel,	...
Renfrew,	Pollok,	110 0	Alluvial,	Sandstone,	S.W.
Dumbarton,	Camis Eskan,	90 0	Light sandy,	Gravel,	...
"	Auchentoshan,	...	Sand and peats,	Sand and clay,	...
Ayr,	Eglinton,	50 0	Light loam,	Clay,	S.W.
"	Loudon Castle,	165 0	Sandy loam,	Sandy gravel,	N.E.
"	"	...	"	"	W.
"	"	...	"	"	S.
"	"	259 0	"	"	Open.
"	"	...	"	"	N.
"	Sorn Castle,	400 0	Reddish loam,	Cold clay,	...
"	"	...	"	"	...
"	"	...	"	"	...
"	"	...	"	"	...
"	"	...	"	"	...
"	Barr Castle,	...	Light loam,	Gravelly,	...
"	Fullarton House,	...	"	"	...
"	Perceton House,	...	"	"	...
"	Rowallan Castle	...	"	"	...
"	Dundonald Road	...	"	"	...
Linlithgow,	Carlowrie,	92 0	Heavy loam,	Clay,	
"	"	...	"	"	
"	"	...	"	"	Open.
Mid-Lothian,	Calder House,	...	Good sandy loam,	Gravel,	Open.
"	Dalmahoy,	...	Light gravelly,	Clay,	...
"	"	...	"	"	...
"	"	...	"	"	...
"	Dalkeith Park,	120 0	Light loam,	Gravelly,	..
"	"	...	"	"	...
"	"	...	"	"	...
"	"	...	"	"	...
"	Newbattle Abbey,	...	Good loam,	Gravel and clay,	...
"	"	...	"	"	...
"	Melville Castle,	200 0	Sandy loam,	Gravel,	N.E.
"	"	...	"	"	S.W.
"	"	150 0	"	Sand and clay,	...
"	Penicuik House,	...	Light sandy,	Clay,	...
East Lothian,	Dunglass,	60	Sandy soil,	Freestone rock,	...
"	Biel,	55 0	Good deep loam,	Clay and gravel,	...
"	"	...	"	"	...
"	"	...	"	"	...

BRITISH ELMS—*continued.*

Height of Tree in Feet.	Length of Bole in Feet.	Present Circumference of Trunk at			Any former recorded Measurements and Dates.			Diameter of Spread of Branches.	REMARKS.
		1 Foot.	3 Feet.	5 Feet.	Date.	At 1 Foot.	At 3 Feet.		
Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.		Ft. in.	Ft. in.	Ft. in.	
...	...	10 7	...	7 4	...	...	...	...	Growing in a group of ash and elm beside "The Haunted Ash."
85 0	...	...	...	18 2	...	...	...	...	This tree is called "Lady Janet."
80 0	...	14 2	...	12 10	...	...	...	...	Girths 11 ft. 2 in. at 20 ft. from base.
80 0	25 0	15 1	...	12 2	...	...	...	...	
91 0	...	15 11	...	14 8	...	...	...	...	Girthed in 1812, 10 ft. 10 in. at 5 ft.
75 0	...	16 9	...	14 1	...	...	...	...	In 1836, 12 ft.; in 1862, 13 ft. 4 in. Is one of a remarkable group of very fine elms. It is figured by Strutt in *Sylva Britannica.*
70 0	...	20 1	...	14 6	...	...	...	...	One of 20 trees of similar dimensions surrounding the garden.
72 0	23 0	13 4	...	12 3	...	...	...	...	*Ulmus campestris*, or English elm.
95 0	18 0	19 6	...	15 3	...	...	...	...	
95 0	15 0	19 1	...	13 8	...	...	...	...	
96 0	18 0	19 2	...	13 10	...	...	...	...	
90 0	...	22 1	...	13 3	...	...	...	...	
90 0	15 0	22 9	...	14 5	...	...	...	...	
60 0	17 0	8 9	...	7 1	...	...	...	...	
66 0	12 0	12 1	...	11 4	...	...	...	...	*Ulmus campestris.* Planted by the Dowager Countess of Loudon 156 years ago, and of which she was very proud.
65 0	11 0	9 5	..	8 11					
70 0	15 0	12 9	...	10 1					
66 0	20 0	11 9	...	8 10					
...	...	27 0	...	16 4	...	...	...	...	Called "The Boss Tree."
...	...	...	...	13 5	...	..	...	..	
...	...	...	...	11 6	...	...	...	...	
...	...	...	...	11 3	...	...	...	...	
...	...	...	...	9 2	...	...	...	...	
90 0	25 0	15 5	12 9	11 9	...	...	...	...	A very massive tree, and wide-spreading head.
82 0	12 0	11 10	...	10 10	...	...	...	...	
93 0	18 0	13 6	...	10 8	...	...	...	60 0	*Ulmus campestris.*
85 0	18 0	...	...	12 7	...	...	...	...	
80 0	65 0	14 0	...	11 7	...	...	...	...	
90 0	70 0	14 1	...	11 4	...	...	...	...	
70 0	50 0	14 3	...	13 1	...	...	...	...	
75 0	...	...	...	12 7	...	...	...	...	
70 0	...	...	...	9 5	...	...	...	...	
80 0	...	...	...	10 0	...	...	...	...	
72 0	...	...	...	9 7	...	...	...	...	
83 0	...	...	17 1	16 3	...	...	...	...	Near kitchen garden.
85 0	...	19 10	...	14 9	...	...	...	...	In lime-tree walk.
50 0	9 9	14 5	...	11 4	...	...	...	...	
55 0	12 0	15 4	...	11 11	...	...	...	...	*Ulmus campestris.*
56 0	9 0	14 5	...	11 10	...	...	...	...	Do.
80 0	23 0	14 7	...	11 4	...	...	...	...	
72 0	16 0	12 8	..	11 11	...	...	...	...	
95 0	35 0	16 8	...	10 11	...	...	...	...	
102 0	12 0	15 9	...	12 11	...	...	...	...	A splendid tree, branching at 12 feet into 2 limbs, respectively, 10 ft. and 8 ft. in girth.
90 0	18 0	17 0	...	12 2	...	...	...	...	

DESCRIPTION OF THE

County.	Place.	Altitude above Sea-level.	Soil.	Subsoil.	Exposure of Site
		Ft. in.			
East Lothian,	Whittinghame,	350 0	Red clay loam,	Sandstone,	Sheltered.
,,	Broxmouth,	30 0	A deep red sandy loam,	Rock and gravel,	...
,,	Tyninghame,	50 0	Red loam,	Clay and sand,	...
,,	,,	...	,,	,,	...
,,	,,	...	,,	,,	...
,,	,,	...	,,	,,	...
,,	,,	...	,,	,,	...
,,	Belton,	75 0	Rich loam,	Sandstone,	...
,,	,,	...	,,	,,	...
Berwick,	Marchmont,	500 0	Strong red clay,	Hard till,	S.E.
,,	,,	...	,,	,,	...
,,	,,	...	,,	,,	...
,,	,,	...	,,	,,	...
,,	Ninewells,	...	Red loam,	Sandy,	...
,,	Duns Castle,	...	Light soil, damp,	Gravel,	S.E.
,,	Blackadder,	...	Rich red soil,	Clay,	...
,,	Kimmerghame,	...	Black loam,	Red clay and sand,	S.
,,	,,	...	Red loam,	Sand,	S.
Roxburgh,	Cavers	...	Good loam,	Clayey,	...
,,	Floors Castle,	...	Deep strong loam,	Blue clay,	...
,,	Wells,		Deep loam,	Gravelly,	...
Kirkcudbright,	Kirkconnell,	...	Light loam,	Gravel and clay,	...
,,	Kenmure,	100 0	,,	Gravelly.	...

BRITISH ELMS—*continued.*

Height of Tree in Feet.	Length of Bole in Feet.	Present Circumference of Trunk at			Any former recorded Measurements and Dates.			Diameter of Spread of Branches.	REMARKS.
		1 Foot.	3 Feet.	5 Feet.	Date.	At 1 Foot.	At 3 Feet.		
Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.		Ft. in.	Ft. in.	Ft. in.	
65 0	18 0	14 4	...	12 0	...	...	...	...	In 1879 girthed 11 ft. 8½ in. A fine head. Circumference of branches 240 ft.
75 0	50 0	12 7	...	9 8	...	...	...	...	
70 0	...	17 1	...	12 3	...	...	...	...	
62 0	...	14 2	...	9 3	...	...	...	...	
70 0	...	12 1	...	7 3	...	...	...	...	
60 0	...	10 11	...	7 10	...	...	...	...	
60 0	...	9 9	...	8 2	...	...	...	...	
56 0	36 0	17 1	...	14 2	...	...	...	...	
70 0	24 0	20 0	...	13 3	...	...	...	...	
70 0	...	...	...	10 1	...	...	...	...	
73 0	...	...	..	10 0	...	...	...	...	
75 0	...	...	...	10 6	...	...	...	...	*Ulmus campestris.*
65 0	...	...	...	10 2	...	...	...	...	Do.
75 0	...	...	...	13 7	...	...	..	...	
70 0	35 0	...	...	11 8	...	...	...	...	
80 0	25 0	...	..	10 4	...	...	...	...	
60 0	80 0	...	13 5	...	...	...	...	...	
90 0	35 0	...	12 11	...	...	...	...	...	*Ulmus campestris.* Blown down in gale of 14th Oct. 1881.
55 0	20 0	13 1	...	10 8	...	...	...	...	
70 0	40 0	16 2	...	14 1	...	...	...	...	Many more of like dimensions.
80 0	40 0	...	...	10 2	...	...	...	...	
50 0	20 0	...	...	13 3	...	...	...	...	
78 0	30 0	15 2	...	10 4	...	...	...	...	

THE OLD AND REMARKABLE LIME TREES IN SCOTLAND.

By Robert Hutchison of Carlowrie.

[*Premium—Ten Sovereigns.*]

Considerable doubt exists amongst arborists as to whether the lime tree (*Tilia europæa*) is indigenous to this country or not. Some evidence, and that of considerable weight, exists, and is cited by several of the older writers on trees, which goes to prove that in the variety of *Tilia europæa microphylla*, or small-leaved lime, it is found indigenous in Worcestershire, Herefordshire, Gloucestershire, and South Wales. But apart from the fact that this particular variety is found indigenous in uncultivated ground, and as underwood in these counties in England, no evidence is found to show that the lime tree, as known at the present day, of our woods and forests, is a native of Britain. Sufficiently conclusive proof, however, exists to show that the variety now best known in our woodlands (viz., the broad or large leaved) has long been naturalised in Scotland, and that its introduction must have taken place at a remote period in our country's history. The extreme rareness with which it ripens its seeds in Britain renders it very improbable that the lime tree of the variety now under consideration is a native of our shores, and hence, from this peculiarity, its propagation in Scotland has been principally from layers, excepting in a few instances where trees have been raised from seed obtained from Holland and other European countries.

The introduction of the lime tree into Scotland appears to have been chiefly with a view to ornamental or picturesque effect in the park or landscape, and with little idea of utility or profit as a timber tree. We find the finest specimens, and indeed all the old or remarkable trees of this species, disposed in lawn policies, or as avenues, or groups, or in formal lines leading to or around ancestral seats, or in pleasure grounds as single specimens in large demesnes throughout the country. Its graceful habit and form, pleasing green foliage, delicious perfume when in flower, rapid growth and ease with which it may be transplanted even when of considerable size, are all characteristics and qualifications which have tended to render the lime tree a great favourite with proprietors for clothing with genial verdure and graceful contour of outline their ancestral policies. It must not, however, from these remarks, be inferred that the lime tree is destitute of any value as a timber-producing tree. The purposes to which, when manufactured into marketable timber, its wood can be applied, or is principally used, are doubtless special, but for turnery purposes, artistic carvings, and decorative as well as many domestic uses, it is invaluable; and it yields one of the finest qualities of charcoal made from any home-grown wood. In point of magnitude, the lime tree takes a prominent place, being frequently found, in various soils and at different altitudes, to attain to 90 or 100 feet in height, with a circumference of trunk and length of bole in proportion to such height.

Another use to which the lime tree is often adapted in this country is in suburban and town planting, in gardens, squares, and public parks, or as boulevards along public walks. It is, indeed, similarly used, but to a far greater extent, in various continental towns both in France, Holland, and Germany, and that also from an early date. "The French," says Du Hamel, "growing tired of the horse chestnut for avenues, adopted the lime for that purpose in the time of Louis XIV.; and accordingly the approaches to the residences of the French as well as English gentry of that date are bordered with lime trees." Since the modern style of laying out pleasure grounds has for the time rendered straight lines of avenue somewhat unfashionable during the last sixty or eighty years, the lime tree has not been nearly so much planted as formerly. The use of the lime tree as a good shelter fence, when planted in close order, against wind for orchards and pleasure grounds, is worthy of farther adoption than at the present day; for while the heads may be pollarded down to become an almost dense mass of bush-like rows of any height that may be desired, the roots of the trees do not, like those of the elm and other hard woods in such circumstances, spread along the surface and impoverish all around them. For bowers and covered ways, or as a screen to exclude unsightly objects, the use of the lime tree planted in close colonnades or columns, is extremely valuable. Interesting instances of its adaptation in this way occur in many localities in Scotland, and one of the most notable we may cite is that of the lime trees in *Monmouth's Walk* at Dalkeith Park, Mid-Lothian.

In this way the lime is a serviceable friend in exposed districts to the agriculturist no less than to the arborist. It admits, moreover, of severe pruning with advantage to its twiggy habit, under such treatment for shelter, or for obtaining that fine Gothic-like colonnade appearance so much admired in many lime-tree avenues, and of which so many noteworthy examples exist at the present day in Scotland, as, for example, at Hopetoun, Linlithgowshire; Duchall, Renfrewshire; Kenmure, Kirkcudbright; Duns Castle, Berwickshire; Kinnaird, Stirlingshire; Dalwick, Peeblesshire; Penicuik, Mid-Lothian; Whittinghame, East Lothian, and other well known places. The lime tree, while luxuriating in an alluvial deep loamy soil with porous cool subsoil, will be found thriving vigorously in almost any variety of soil, and is also found of large dimensions at lofty altitudes; as, for example, by reference to the appendix, it is recorded at Cleish Castle (Kinross-shire), where, at 600 feet above sea-level, it has attained a height of 93 feet, and a girth, at 5 feet from the ground, of 10 feet 4 inches—no mean growth at such an altitude and in such soil and subsoil. There are many other trees in this site of nearly equal dimensions. But while we have thus indicated the suitability of the lime tree for planting in almost any situation and soil in Scotland with certain prospects of success at the present day, it is rather discouraging to the arboriculturist, who wishes to trace out the progress and history of the species in Scotland during past years, to find that Dr. Walker, in his *Catalogue* of 1799, records only one remarkable lime tree in Scotland. This he gives as growing at Polkemmet (Linlithgowshire), and states to be then about seventy years old, and 5 feet 1 inch at 3 feet above ground! From this we may assume either that the learned professor had paid little attention to this species, or had not admired the tree and thought it of little value to the country, or that there were then few lime trees of note to which he had access. Had his zeal for the propagation of the species throughout the country been commensurate with the interest he took in other varieties of trees, no doubt he could easily have found many nobler examples at that date with which to enrich his *Catalogue*. He only further states, in regard to the lime trees in Scotland, that "the oldest, and probably the largest, are those at Taymouth and Inveraray." Loudon also is scarcely more fortunate in his record of remarkable lime trees. He only refers to one at Hopetoun (Linlithgowshire), "a hundred years planted, 70 feet high, with a trunk 3½ feet in diameter at 1 foot from the ground," which is probably the one referred to in the appendix to this chapter. It stands in the fine lime-tree avenue near Hopetoun House. The others he cites are at Gordon Castle, Roseneath, Taymouth, and Perth Nursery. The Gordon Castle lime has been long famous in the north of Scotland as the finest and largest lime tree in that quarter. When measured about 1838 by Loudon, it is said to have been above 80 feet high, and 16 feet in circumference, at 2 feet from the ground. This tree is still extant, and its dimensions are as follow:—

Girth at 1 foot above ground, ...	20 feet 9 inches.
Girth at 5 feet above ground, ...	16 „ 8 „
Height of tree, ...	68 „
Circumference of spread of branches, .	372 „

This tree is only equalled in size by two others in the kingdom.

The branches issue from the trunk at a uniform height, and form an arch 24 feet in diameter. The limbs bend gracefully over and rest on the ground, the intermediate space being gravelled over, while an arched entrance is formed out of the branches on opposite sides. The whole of the lower ones are resting on the ground, and the tree is therefore clothed with foliage to the grass. In 1863 this tree, which is called the *Duchess's Tree*, was 70 feet in height, and girthed, at 3 feet above ground, 16½ feet, while the circumference of the branches was 310 feet. It has therefore continued in a growing condition, and is still, at the present day, vigorous. The soil is alluvial loam on a gravel subsoil, and the altitude of the site above sea-level is 70 feet. The exposure is N.W.

The lime tree seems to be peculiarly well adapted to the soils and climate of the north of Scotland, and it succeeds there even better than in the more southern parts of the kingdom, as it does not lose its leaves so early in autumn in the north as it does in the southern districts of Britain. There are many fine specimens to be noted in the northern counties, as, for example, at Brodie Castle, Altyre, Darnaway, and other localities in Morayshire, where there are numerous very handsome examples to be found. Several of these are given in the appendix. We may, perhaps, beyond referring to the dimensions given in these returns, notice here the very fine and vigorous lime-tree avenue at Brodie Castle, which is worth a long journey to see. The many fine lime trees at Altyre are specially noticeable for their tallness, some of them attaining almost 100 feet in height, with corresponding development of trunk, and all growing on a light loamy soil, on a gravelly and clay subsoil. The extreme stature of the lime in such soil, as we find here, might be attributed to the trees having been "drawn up" by close planting in their early years, but this is not the case; they appear never to have been, at any time, crowded in their sites.

At Kinnaird, Forfarshire, there are several very large lime trees growing in a deep sandy loam, upon a subsoil of gravel, and at an altitude of only 3 feet above sea-level. Of these, the largest is now 19 feet 8 inches in girth at 1 foot, and 18 feet 1 inch at 5 feet from the ground. Another measures 16 feet 2 inches, and 12 feet 8 inches in girth, at 1 and 5 feet respectively. These trees, with others of similar bulk, were planted 200 years ago, as is ascertained from family records at Kinnaird. From Perthshire we are able to furnish details of many fine lime trees, both growing singly as park trees, and in avenues of majestic appearance and dignity. At Blairdrummond, for example, we find trees girthing at 5 feet from the ground 14 feet 9 inches and 14 feet 3 inches, an unusually large size for the lime to attain. These trees are also from 82 to 98 feet in height, with richly verdant foliage gracefully "feathering" their trunks to the very ground. In Drummond Park we find amongst others two noble specimen trees, girthing respectively 21 feet 7 inches, and 19 feet 1 inch at 1 foot, and 14 feet 11 inches, and 15 feet 11 inches at 5 feet above the surface. They are 85 and 84 feet in height, with clean boles about 20 feet long. There are taller trees in this locality, reaching nearly 100 feet in height, but scarcely so large in circumference, although in this respect they do not come far short of the measurements of those given.

At Kinloch, near Meigle, we find a tree 21 feet 2 inches at 1 foot, and 19 feet 2 inches at 5 feet from the ground, and with a diameter of branches embracing 90 feet. This is the heaviest lime tree we have been able to record as to girth, either in this or in any other county in Scotland. A fine specimen of the spray-like habit of the lime when in open and favourable situations, which it often affects, is instanced in the Freeland lime. In this county (Perth) the fine old avenue of lime trees at Kilgraston is one of the most notable and picturesque features of arboriculture representing this species treated in the formal manner so common about 150 years ago, and in which the artificial disposal of the trees does not in the least degree interfere with their own natural and peaceful habits. There are several capital instances found in Scotland of the suitability of the lime for succeeding well at lofty altitudes, and in this particular reference to the appendix will afford interesting details. For example, besides Cleish Castle already referred to, at Kinross House, at an altitude of 550 to 600 feet, in a damp reddish clay loam, on a clay subsoil, we have noble trees of from 75 and 93 feet in height, quite vigorous and healthy, girthing from 7 feet 8 inches to 10 feet 4 inches at 5 feet up. At Inveraray Castle, Argyllshire, the lime tree recorded in 1863, as being then 16 feet in girth at 3 feet from the ground, in a sandy soil, on gravelly bottom, is now 20 feet 6 inches in circumference at 1 foot, and 15 feet 1 inch at 5 feet above ground, and still making progress in the development of timber. At Pollok (Renfrewshire), where periodical measurements of trees have been long taken in a most accurate and careful manner, we find a lime of the following dimensions at the dates stated:—In 1858, at 5 feet, 9 feet 6 inches; in 1862, 9 feet 7 inches; and in 1881, 11 feet 3 inches. This tree now girths at 1 foot from the ground, 12 feet 8 inches, and is 82 feet high. Near the old tower of Cairnhill (Ayrshire) there is a remarkable square of thirty limes, by far the oldest and largest in this district, the largest of which girths 14 feet 2 inches at 5 feet up, and 16 feet at 1 foot. There are many more fine limes given in the appendix from this county, and their number might be multiplied. In the Lothians are to be found at the present day numerous fine lime-tree avenues, and trees planted in single rows, where their conical upright habit and gracefully pendant sprays of greenery sweeping the very lawn, produce a very fine gardenesque and architectural effect. At Hopetoun House one of the finest vistas of lime trees may be seen, in full vigour and splendour, though their veteran forms have shadowed that princely domain for fully two centuries. At Dalkeith Park there are many fine examples, both standing as single sentinels in the ducal park and as colonnades or rides. Here we may specially refer to the lime trees planted in a long triple alignment in what is called Monmouth's Walk, which gives an adequate conception of the effect which may be produced by pollarding the lime when disposed in policy grounds in such a manner, whether for the purpose of artificially producing a grand Gothic architectural effect by their inarched boughs, recalling as it were the long columnar and perpendicular aisle-like appearance of a vast cathedral, or for the more utilitarian purpose of inducing a closer habit of growth and foliage to screen out from the policy any ungainly buildings or objects. There are also observable in several parts of the beautiful and interesting park of Dalkeith, instances of the predisposition of the lime tree when grown in close rows, or amongst other tall trees, to run up a head composed of several large stems, which interlace and become naturally inarched or self-grafted in the most quaint and interesting manner, presenting a curious and weird-like and grotesque appearance,—fitting and appropriate subjects for the pencil of a Gustave Doré! A fine row of lime trees, of apparently contemporary age with the Dalkeith limes, still exists at the adjoining estate of the Marquis of Lothian, at Newbattle Abbey. They are all in pristine vigour, and girth from 12 to 14 feet on an average, at 5 feet from the ground. At Ingliston, in Mid-Lothian, stands behind the mansion-house a notable lime called "Wallace's Switch," which girths 19 feet 2 inches at 1 foot, and 17 feet at 5 feet above ground, with a clear bole of 20 feet, and total height of 83 feet. Popular local tradition states that Scotland's hero, Sir William Wallace, riding past this spot, stuck his riding switch into the ground, and from that this veteran tree sprang! Without wishing to strip this aged and noble monarch of any of its romantic association with the past, it appears much more probable that the popular name it now bears arose from its having been planted by the hand of one of a former family named Wallace, who were proprietors of the estate, and who owned the property about 250 years ago. Another of the many lime-tree avenues in the Lothians worthy of notice is that at Penicuik, to the right of the mansion-house, which presents a most imposing appearance, with its pillared aisle of perpendicular columns, each of whose shafts measures 13 feet and 14 feet at 1 foot from base, and 10 and 11 feet at 5 feet up. The vista opened up by this fine avenue carries the eye stereoscopically to the open space on the opposite bank of the glen of the Esk, where an obelisk raises its needle-shafted point in memory of the poet Allan Ramsay.

Turning now to East Lothian, we find that county and Berwickshire also equally rich in fine specimens of old and large lime trees. These are, as in the case of most of the other districts which we have cursorily glanced at, disposed in lines, or formal rows, or avenues.

At Whittinghame there is a fine avenue of limes in red clay loam upon sandstone formation, at 350 feet altitude, very healthy and thriving; there are fifty trees in it, which average in girth from 8 feet to 9 feet at 5 feet from the ground. The lime-tree walk at Yester contains many fine specimens, girthing, as will be observed by reference to the appendix, as much as 14 feet 6 in some cases. These trees, with gracefully drooping branches, are foliaged to the very ground, and the delightful perfume of their summer's blossom scents the air in the most delicious manner far around. At Belton, near the sea-coast in East Lothian, at only 75 feet elevation, there is a magnificent specimen of a park lime tree. It is now 60 feet high, with a gracefully balanced conical contour, with a bole measuring 25 feet in length, and a girth of trunk of 21 feet at 1 foot, and 11 feet 8 at 5 feet from the ground.

Before leaving the county of Haddington, and its many interesting and historic trees, notice must not be omitted of the finely wooded estate of Lennoxlove, near Haddington. Anciently called Lethington, and the domain in former centuries of the powerful house of Lauderdale, its history is vividly intertwined with legends of strife and border warfare, as well as with many storied annals of this country's history in later centuries, and in commemoration of which events, doubtless several of the old patriarchal trees still surviving were planted,—a fashion in former days much more common than it is at the present. Some of the finest lime trees in the county may be seen within the grounds. To the west of the house, stands a conspicuous circle of venerable limes, still vigorous in their old age, which doubtless have a romantic history of their own, but which popular tradition has failed to preserve. Some clue to it may probably be found in the family charter-chest, but their history for the present remains unchronicled, although it may have been associated with that of the neighbouring "Politician's Walk,"—a double row of old ash and sycamore, apparently coeval with the lime-tree circle, and under whose umbrageous shade Sir William Maitland was wont to take his morning walk, and revolve the projects which were fraught with such consequences to the ecclesiastical Reformers of that age.

In many parts of Berwickshire the lime tree appears to have been an especial favourite with the proprietors for planting in the formal manner so often referred to in this chapter. Excellent examples of this style of planting are seen at Marchmont, Spottiswoode, Blackadder, Kimmerghame, and Duns Castle. At the first-named place, growing in strong red clay, upon a subsoil of hard till, there are several lime trees now about 80 feet high, and upwards of 11 feet in circumference. The Duns Castle lime-tree avenue, long the pride, and one of the most interesting arboricultural features of Berwickshire, is likely now to become even more interesting and famous than ever, from the recent calamity which befell it, in common with very many other trees of large dimensions and venerable antiquity in this district, by the disastrous north-easterly gale of 14th October 1881, which swept across this and the eastern portion of the adjoining county of Haddington with such unwonted severity. The avenue referred to contains upwards of fifty splendid columnar or perpendicularly architectural-like trees, of dimensions ranging in girth from 9 feet to 14 feet in circumference, whose splendidly arched Gothic-like aisle extends in a straight line, in an easterly direction, from the old castle to the Duns road. The singularly impressive beauty of this famous avenue reminds one of the words of Cowper:—

"How airy and how light the graceful arch;
Yet awful as the consecrated roof,
Re-echoing pious anthems! while, beneath
The chequer'd earth seems restless as a flood
Brush'd by the wind. So sportive is the light
Shot through the boughs, it dances as they dance,
Shadow and sunshine intermingling quick,
And darkening and enlightening, as the leaves
Play wanton, every moment, every spot."

But, alas! the glory of trees, as of men, is not for ever. The great storm of October referred to proved too much for the old veteran lime trees here, whose close ranks and upright trunks had weathered so many a blast before, and breaking upon its northern side row in great fury, thirteen of the finest specimens were uprooted, and crashing down upon their neighbours carried destruction along with their fall, in the sad havoc made upon the heads of those through and upon whose branches and limbs they fell. The fallen trees averaged 12 feet in girth at 5 feet from the ground. The truly sad and melancholy aspect of this formerly noble avenue, a few days after the storm, with the huge trunks laid flat across the avenue, with shattered limbs, and twisted and broken branches, will not soon be forgotten by those tree lovers who had the melancholy privilege of seeing them. To any admirer of nature the spectacle would be sad indeed, but to an enthusiastic arborist it was a sight at once most disheartening and sickening. Mr. Hay, however, the generous proprietor, with feelings of deep regret at the loss of so well-known a landmark in the county, consulted with the author of this paper as an authority in arboriculture, and he at once advised their being raised and reset in their sites. This work was at once willingly, and ungrudgingly as to expense, undertaken by Mr. Hay, and under the personal superintendence of Mr. Shearer, long well known in connection with Yester gardens, and Mr. Buchanan, Mr. Hay's forester, the prescribed advice has been most successfully carried out, and with favourable seasons to permit of nature's recuperative powers having a fair chance of re-rooting these veterans, and with the adventitious aid of the applications and root treatment bestowed on them, the soil and other physical conditions of the site being favourable, it is confidently to be hoped that this fine old avenue is not lost to the county, but will in a few years again present a healthy and vigorous appearance; and although much of the massive grandeur of o'er-arching boughs, and gracefully depending branch, the growth of many years, is gone, the resuscitated and rescued lives of the fallen, storm-beaten, and shattered veterans, raised to their pristine position, will add fresh interest to the old associations of the Duns lime trees, and a new laurel to the achievements of arboriculture in her scientific aspect. The height of the trees raised were from 43 to 75 feet; one contained 240 cubic feet of measurable timber, and the girth varied from 12 feet 2 inches upwards, the greatest being 13 feet 7 inches at 5 feet from the ground.

This praiseworthy effort to regain and re-establish the amenity of hoary and ancestral antiquity, rudely and suddenly shattered by the blast, may fittingly recall a passage from Landor, in his *Conversations*, and with which we may appropriately close the present chapter:—"Old trees in their living state are the only things that money cannot command. Rivers leave their beds, run into cities, and traverse mountains for it; obelisks and arches, palaces and temples, amphitheatres and pyramids, rise up like exhalations at its bidding; even the free spirit of man, the only thing great on earth, crouches and cowers in its presence. It passes away and vanishes before venerable trees! What a sweet odour is there! Whence comes it?—sweeter it appears to me, and stronger than the pine itself." "I imagine," said he, "from the linden." "Yes, certainly." "Oh, Don Pepino," cried

I, "the French, who abhor whatever is old and whatever is great, have spared it. The Austrians, who sell their fortresses and their armies, nay, sometimes their daughters, have not sold it. Must it fall? Oh, who upon earth could ever cut down a linden!"

Since the foregoing chapter was written in the end of October 1881, and before any opinion could be formed of the probable success of the very interesting process of raising the fallen trees in the Duns Castle avenue, it may now be interesting to add that up to this time (February 1883) the experiment has been eminently successful.

Excepting in regard to severe gales which prevailed shortly after the avenue had been raised, the seasons have been very favourable, and good healthy young shoots have been put forth during last year. In fact, the growths of young wood have been all that could be expected, even if the trees had suffered no such calamity. The moorings of the trees, which were of seven-strand wire ropes, very carefully adjusted, proved quite sufficient to support them from the effects of all the gales that have taken place during the interval since the experiment was made. Sixty-two trees in all of various sorts were raised in the park at Duns Castle, and all promise to do well. They were each treated on the same principle as the avenue trees. The success of this undertaking at Duns has led to similar attempts, but on a smaller scale, elsewhere, and at the Tynninghame policies a number of limes and other hardwooded trees of large size have been successfully "*resurrected.*" For such an operation, however, the lime is by far the most suitable variety of tree, from its fibrous roots, and soft and spongy nature, and quick growth. In every instance where it is attempted to raise a large lime, the hole caused by the overthrow must be excavated 2 feet deeper, fresh good soil thrown in, and when raised, the butt end of the trunk of the tree should be sunk from 6 to 9 inches deeper than it was before it fell.

APPENDIX.—DESCRIPTION OF THE

County.	Place.	Altitude above Sea-Level.	Soil.	Subsoil.	Exposure of Site.
		Ft. In.			
Aberdeen,	Keithhall,	100 0	Deep loam,	Clay,	N.E.
Moray,	Brodie Castle,	...	Black sandy loam,	Sand and clay,	N.E.
"	"	...	"	"	...
"	Altyre,	..	Light loamy,	Gravelly and clay,	...
"	"	...	"	"	...
"	"	...	"	"	...
Ross,	Brahan,	110 0	Good loam,	Heavy clay,	...
"	"	...	"	"	...
Forfar,	Kinnaird,	30 0	Deep loam sandy,	Gravel,	...
"	"	...	"	"	...
"	"	...	"	"	...
Perth,	Blairdrummond,	50 0	Sand and gravel,	"	S.W.
"	"	...	"	Clay,	...
"	Drummond Park,	..	Clayey loam,	Gravel and moss,	...
"	"	...	"	"	...
"	"	...	"	"	..
"	Stobhall,	...	Clay and gravel,	Sand,	...
"	Moncrieffe,	...	Light loam,	Gravel,	S.
"	Dollerie,	...	"	Gravel and sand,	...
"	Kinloch (Meigle).	180 0	Black earthy,	Red sandstone,	...
Kinross,	Cleish Castle,	550	Damp reddish loam	Clay,	...
"	"	to	"	"	...
"	"	600	"	"	...
"	"	...	"	"	...
"	"	...	"	"	...
"	"	...	"	"	...
"	Kinross House,	600 0	Red loam,	Sand and clay,	...
Argyll,	Inveraray Castle,	40 0	Brown loam,	Sandy gravel,	...
Renfrew,	Pollok,	120 0	Alluvial,	Sandstone,	S.W.
"	Duchal,	...	Good free loam,	Gravelly clay,	...
"	"	...	"	"	...
"	"	...	"	"	...
"	"	...	"	"	...
Dumbarton,	Auchentoshan,	...	Sand and peat,	Sand and clay,	...
"	Cairnhill,	...	Sandy loam,	Gravelly,	...
"	"	...	"	"	...
"	"	...	"	"	...
"	Rowallan Castle,	...	Light loam,	Sand and gravel,	...
	"	..	"	"	...
"	Loudon Castle,	165 0	Sandy loam,	Sandy gravel,	...
"	Kirkmichael,	...	Light loam,	Gravel and clay,	...
West Lothian,	Hopetoun,	110 0	"	Clay,	..

LIME TREES (*Tilia europœa*).

Height of Tree in Feet.	Length of Bole in Feet.	Present Circumference of Trunk at			Any former recorded Measurements and Dates.			Diameter of Spread of Branches.	REMARKS
		1 Foot.	3 Feet.	5 Feet.	Date.	At 1 Foot.	At 3 Ft in.		
Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.		Ft. in.	Feet.	Ft. in.	
58 0	27 0	9 4	...	8 1	...	...	...	...	One of a fine avenue of 18 trees.
73 0	...	15 9	11 7	...	...	...	...	...	There are many fine lime trees in this park.
75 0	...	15 6	...	11 10	...	...	...	...	There is a very handsome lime avenue here.
92 0	55 0	14 3	...	12 10	...	...	...	...	There are many very handsome lime trees in this situation, very large and heavy trees, and particularly remarkable for their great height in almost every instance.
87 0	60 0	13 11	...	12 2					
85 0	50 0	14 0	...	11 10					
55 0	30 0	...	...	13 10	...	...	...	.	
84 0	...	17 6	...	12 9	...	...	...	...	Girthed 16 ft. 8 in. at 1 ft. up in 1869.
70 0	21 0	16 2	...	12 8	...	...	...	...	A very highly ornamental tree, planted about 200 years ago, according to family records.
66 0	8 0	16 3	...	12 1					
62 0	6 0	19 8	...	18 1					
98 0	6 0	...	...	14 9	...	...	...	...	
82 0	18 0	...	...	14 3	...	...	...	...	
85 0	21 0	21 7	...	14 11	...	...	...	77 0	
84 0	18 0	19 1	...	15 11	...	...	...	83 0	
91 6	21 6	17 10	...	13 0	.	...	...	...	
90 0	20 0	10 10	...	9 8	...	...	...	60 0	
75 0	12 0	14 0	...	13 2	...	...	...	80 0	A very handsome tree.
70 0	...	19 11	...	15 6	...	...	...	...	A handsome tree of conical habit.
73 0	...	21 2	...	19 2	...	...	...	90 0	A very fine specimen tree.
93 0	18 0	14 10	...	10 4	. .	...	...	...	
80 0	24 0	10 3	...	8 6	...	...	...	...	
90 0	40 0	10 2	...	7 8	...	...	...	...	
85 0	26 0	12 2	...	9 2	...	...	...	...	
75 0	...	14 8	...	10 3	...	. .		...	
70 0	20 0	13 11	...	7 6	...	...	...	...	
71 0	...	...	...	11 5	...	...	.	...	Growing in the avenue.
95 0	...	20 6	...	15 1	...	...	...	...	
82 0	...	12 8	...	11 3	...	...	...	...	In 1862 girthed 9 ft. 7 in., and in 1858, 9 ft. 6 in. at 5 ft.
85 0	30 0	...	18 0	12 9	...	...	...	...	These splendid trees form part of a most magnificent avenue here. Very vigorous and healthy.
80 0	25 0	...	17 6	12 6					
79 0	32 0	...	16 3	10 0					
83 0	24 0	21 0	...	12 11					
75 0	30 0	12 4	...	10 1	...	...	...	...	
...	...	15 6	...	14 2		...	...	...	These form part of a square of 30 lime trees, by far the largest and oldest in this district of Ayrshire. The grow beside the old tower of Cairnhill.
...	...	16 0	...	14 2					
...	...	14 0	...	11 9					
...	...	13 2	...	10 1	...	...	...	...	
...	...	11 9	...	9 9	...	...	...	...	
...	...	12 8	...	10 2	...	...	...	...	
80 0	25 0	...	23 1	...	...	...	...	...	Diameter of lower branches covers 100 ft.
85 0	30 0	...	...	...	...	...	...	...	There is a magnificent avenue of limes here, averaging 12 ft. at 3 ft. up

DESCRIPTION OF THE

County	Place.	Altitude above Sea-Level.	Soil.	Subsoil.	Exposure of Site.
		Ft. in.			
Mid-Lothian,	Ingliston,	95 0	Light loam,	Gravelly,	Open.
,,	Dalmahoy,	...	Gravelly loam,	Clay,	...
,,	,,	...	,,	,,	...
,,	Dalkeith Park,	100 0	Good loam,	Gravelly,	...
,,	,,	...	,,	,,	...
,,	,,	...	,,	,,	...
,,	,,	...	,,	,,	...
,,	Penicuik House,	...	Light sandy,	Clay,	...
,,	Melville Castle,	150 0	Sandy loam,	Gravel and sand,	Sheltered.
,,	Middleton,	750 0	Light loam,	Gravelly,	S.W.
East Lothian,	Whittinghame,	350 0	Red clay loam,	Sandstone,	Sheltered.
,,	Yester,	350 0	Clay loam,	Red sandstone,	E.
,,	,,	...	,,	,,	...
,,	,,	...	,,	,,	...
,,	,,	...	,,	,,	...
,,	,,	...	,,	,,	...
,,	Belton,	75 0	Loam,	Sandstone,	N E.
,,	Ormiston Hall,	280 0	Light soil,	Gravelly,	...
Berwickshire,	Marchmont,	500 0	Strong red clay,	Hard till,	S.E.
,,	,,	...	,,	,,	...
,,	,,	...	,,	,,	...
,,	Duns Castle,	...	Light soil,	Gravel,	S.
,,	,,	...	,,	,,	...
,,	Kimmerghame,	...	Black loam,	Red clay,	N.
Roxburgh,	Wells,	500 0	Deep loam,	Gravelly,	...
Dumfries,	Drumlanrig,	320 0	Rich friable loam,	Clay till,	...
Kirkcudbright,	Kenmure,	100 0	Light loam,	Gravelly,	...
,,	,,	...	,,	,,	...

LIME TREES—*continued.*

Height of Tree in feet.	Length of Bole in feet.	Present Circumference of Trunk at			Any former recorded Measurements and Dates.			Diameter of Spread of Branches.	REMARKS.
		1 Foot.	3 Feet.	5 Feet.	Date.	At 1 Foot.	At 3 Feet.		
Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	
83 0	20 0	19 2	17 1	17 0	...	...	...	...	Locally called "Wallace's Switch."
65 0	50 0	17 1	...	14 7	...	...	...	...	
87 0	70 0	13 7	...	10 6	...	...	...	...	
90 0	...	...	...	13 10	...	..	..	..	There are many fine lime trees here Monmouth's Walk is a fine example of trees planted in allignment and pollarded. There are also numerous instances of natural-grafting or "inarching" of lime trees, many of which are very quaint and interesting in appearance.
87 0	...	...	...	12 5	..	...	...	...	
80 0	...	...	...	13 0	...	...	...	...	
85 0	...	...	...	14 4	..	...	...	...	
80 0	35 0	13 0	...	9 4	...	...	...	...	
80 0	8 0	12 3	...	11 11	.	...	...	...	
75 0	18 0	11 2	...	9 5		...	...	50 0	
63 0	30 0	...	9 0	8 9	...	...	...	..	One of a fine avenue of lime trees (50 trees).
80 0	18 0	15 7	...	14 6	...	...	...	...	A beautiful avenue. Trees are furnished to the very ground with gracefully-drooping branches.
83 0	33 0	18 4	...	14 2	..	...	...	...	
78 0	13 0	15 9	...	12 6	...	...	...	...	
80 0	12 0	15 0	...	12 7	...	...	..	..	
82 0	28 0	14 1	...	10 8	...	...	...	...	
59 0	25 0	21 0	...	11 8	...	...	...	...	
60 0	19 0	14 2	...	12 9	...	...	...	...	
78 0	...	...	...	11 1	...	...	...	...	
76 0	...	...	...	10 6	..	...	...	...	
70 0	...	...	...	9 2	...	...	...	...	
75 0	35 0	..	...	11 9½	...		...	...	
80 0	40 0	...	...	8 10	...	...	...	...	A very fine lime avenue here contains over 50 similar trees.
85 0	30 0	...	13 2	...	...	...	...	...	
90 0	40 0	...	...	7 11	...	...	...	...	
91 0	7 0	23 0	...	15 4	...	...	...	75 0	20 yards east from Plumberry old castle.
95 0	...	13 3	...	10 11	...	...	...	...	Two trees of a fine avenue of 150 yards long planted in 1700. There are 30 trees on each side, and 30 feet between the rows.
93 0	...	12 6	...	12 1	...	...	...	...	

STURDY IN SHEEP.

By George Armatage, M.R.C.V.S., London.

[*Premium—Five Sovereigns.*]

Various appellations are given to this disease. It is technically known as *Hydrocephalus hydatideus*, *Cœnurus cerebralis*, and vulgularly as "Sturdy," "Gid," "Goggles," "Turnsick," "Turnside," "Vertigo," &c. It is the *Étourdi* of the French, and *Dreh Krankheit* of the Germans.

Nature and Causes.—Sturdy is now well known as a disease due to the presence of a form of parasite within some part of the brain or nervous system, giving rise to serious disturbance, and often attended with fatal results. The origin was for a long time shrouded in mystery, and as the indications bore a strong resemblance to other diseases of the nervous system, it was frequently confounded with and mistaken for them.

Sturdy chiefly prevails during summer among sheep gathered in large flocks, feeding on the hills and unenclosed lands, and attended by dogs. As a rule, lambs under one year old are the common victims; older animals, beyond the age of two years, are seldom attacked. Sickly and enfeebled sheep suffer during the autumn and winter months. These are the conditions which ensure the constant prevalence of the disease among the cheviots, and sheep generally, on the hills of Scotland. In other districts, where the pastures are small and enclosed, it is also present, provided the sheep are collected from time to time by dogs. Where dogs are not employed the disease is very rarely seen.

Symptoms.—The indications of sturdy depend upon the location of the hydatid or bladder of the parasite. The usual form is seen when one of the hemispheres of the brain proper or cerebrum is the situation of the cyst; but various modifications of the signs will take place when the parasites are distributed in numbers over various parts. In most instances but one hydatid is present, and the disease then assumes the simple form. The precise situation of a single cyst is decided as a rule with tolerable accuracy by paying attention to the leading signs. If it is embedded in one hemisphere, the sheep will turn to the right or left hand, according to the side affected. He will then describe a series of concentric circles, the direction being always towards the diseased hemisphere. When the cyst is situated between the hemispheres, the animal lifts his head and feet high, and goes in a straight line forwards. In both instances there is evident stiffness and an awkward gait. The signs are wholly changed if the cerebellum or little brain is the part affected. As this section, among other functions in health, presides over the muscular movements of the body, probably ensuring a harmony or co-ordination in them, this power is now lost. The head is carried in an elevated manner; but the limbs are no longer under the complete control of the will. They are moved, but scarcely flexed or raised from the ground, and there is much hesitation, while the acts are irregular and insufficient to enable the animal to make ordinary progress. As a result of this, the body is propelled more by its own gravity than otherwise. The limbs being unable to act in concert, fail to support it, and thus by a succession of rapid movements the sufferer plunges, leaps, or stumbles, and falls. After several struggles he may partially rise, and roll on his side; if he is able to regain his feet, the same acts are repeated continuously. Another form of the disease is known as "Thorter-ill," the parasite being located in the spinal cord, giving rise to paralysis of one or both sides of the body.

Such are the prominent signs after gradual development in ordinary cases, and during early periods; but owing to invasion of brain substance, which it must be understood always takes place in advanced disease, a mighty disturbance of functions of the whole nervous system and other organs inevitably follows, giving rise to additional and even complicated manifestations. The first result of the presence of a foreign body within the cranium is, of course, pressure, arising from the gradual increase by natural growth of the parasite. This not only disturbs the functions of the brain, but impedes circulation more or less; and, therefore, we have exalted nervous action, supplemented and followed by local congestion, which produces dulness, stupidity, and even insensibility. These opposite conditions are the cause of the exacerbations of the disease. But we may notice that as the parasite grows, the brain substance, as well as the bony case—the cranium—yield to it; in other words, they grow less at the particular part, the first by direct absorption, and the latter by infiltration of fluid within its substance softens, a process of preparation for the same end in the hard structures. It is noticed during these changes, the accommodation thus offered by receding structures admits of farther growth of the parasite, the sufferer being permitted a time of freedom from the signs of disturbance and agony. The sheep apparently recovers, but after a time, the hydatid having attained an increase of size, again exerts pressure and irritation, and the whole train of symptoms reappear. Further complications also may be expected. One or both eyes may become amarautic, being prominent, staring, and having a bluish colour; the animal may also become totally blind or deaf, so as to be unable to keep company with the rest of the flock, or to avoid frequent injury from violent contact with various stationary objects. It will be apparent that such derangement of the nervous system will not be without its effects upon other functions essential to life. Circulation, respiration, and nutrition being deprived of the necessary controlling nervous force, are not properly performed, therefore emaciation proceeds, the animal gradually becomes paralysed, and being unable to stand, or move in search of food, finally dies, sometimes in convulsions, or quietly during insensibility.

It would appear that, occasionally, in the violent falls to which the creature is often subject during the convulsive movements produced by the parasite, a providential means for the recovery is successfully established. The farmer or shepherd who witnesses a severe attack with subsequent fall and apparent death, naturally prepares for the disposal of the carcase. This appears to be all the more necessary as he notices in addition the creature has "broken his head," and through the open wound of the fractured skull the brain is apparently protruding. Life does not, however, pass away, for the animal recovers; the fall has saved his life. A stone or other hard substance was fortunately beneath the diseased and softened part of the cranial bones, and the blow divided them, the opening favouring the rupture and escape of the cyst of the parasite with its contents. The brain, not being too far disorganised, having lost the foreign body, gradually recovers its functions, and providing there are not other hydatids present, the animal fattens, and at length goes to the butcher.

Remedial Treatment.—Based upon the experience gained in such instances of accidental recovery as just related, an operation is frequently performed for the early removal of the parasite. We believe it was Hogg, the Ettrick Shepherd, who proposed and adopted the plan of "wiring," or passing a wire up the nostrils so as to puncture the hydatid. This, however, could only be successful when the parasite was located in the anterior portion, or olfactory lobes of the brain, for if such an operation were performed without positive evidences, and they are not always so, death must be the inevitable result. Later intelligence has pointed out that, as a rule, a softened state of the bones of the skull exists, with slight enlargement externally over the situation of the hydatid, when located in the superior surface of the hemispheres. This indication is absent if the cyst is at the base of the brain, or at the inferior portion of the olfactory lobes, and we therefore cannot be so decided in the matter. With the raised and softened place on the skull there is not much danger of mistake, and by means of a suitable trocar and canula, to which a syringe is fitted, many Scotch shepherds have become expert in relieving the animal. The trocar and canula are first carefully passed through the ulcerated portions of the skin and bones, so as to enter the sac only, when the trocar is withdrawn, leaving the canula in the wound. The syringe is then inserted in the canula, and an upstroke of the piston draws out the fluid and sac containing the embryo worms. A cap or plaster is then put on the part to afford protection from irritants, &c., and the animal is put in a quiet spot. If the operation has been adopted sufficiently early, the result will probably be successful. Belladonna and other similar remedies may be of service in certain conditions, but the attendant veterinary surgeon can only prescribe them with safety and advantage.

Natural History and Migrations of the Parasite.—It was not until the results of Küchenmeister's experiments were made known in 1853, that the true origin of sturdy was generally known; and, as usual, many extreme and even amusing views were entertained regarding it. By some the disease was regarded as serous apoplexy, or a dropsical state of the brain induced by external violence, hereditary or other causes. It was considered by other observers to be due to a fly which crept up the nostrils, and having penetrated the brain through the thin plates of the ethmoid bone, deposited its eggs, which by subsequent enlargement and development formed the hydatid in question. This view probably arose from observations made on the migrations of the *Œstrus ovis*, and gave rise to the adoption of the operation of "wiring." A similar fly was also supposed to pierce the external bony plates of the skull, and thus not only the hydatid, but the softening and ulceration of tissues, were thought to be satisfactorily accounted for. The Ettrick Shepherd believed sturdy was produced by cold attacking the loins, and this led to the excellent practice of clothing the sheep, during the severity of winter, in exposed situations on the Lammermuir hills. Other observers attributed it to excessive fat in lambs, or to weakness and an enfeebled constitution inherited from ewe or ram.

Many intelligent breeders, and even shepherds, have noticed a connection between the prevalence of sturdy and the presence of dogs, but the major part attributed the disease to fright occasioned by being worried. These facts stimulated scientific men to prosecute the search after truth, and the result is that cause and effect are now well understood. In 1842 Steenstrup published his essay on *Alternation of Generations*, which showed that in the propagation of entozoa in man and the lower animals, there is a constant law in operation which determines "that an animal [or parasite] bears young which are, and remain, dissimilar to their parent, but bring forth a new generation whose members either themselves, or in their descendants, return to the original form of the parent animal." This law, he declared, was totally opposed to that of metamorphosis or simple change, as seen in the tadpoles of frogs and toads, as well as larvæ and chrysalises of many insects, descendants which, however unlike, gradually and simply change and become in every respect like their parents. On the other hand, entozoa, as the many varieties of intestinal and other worms, first bring forth ova which cannot directly grow up into the adult or parent worm, but by entering another animal, called the intermediary bearer, pass through a farther stage of development, and produce another colony or brood; these, in turn, entering again the first species of animal, develop the adult and mature worm.

Dujardin and Von Siebold, in 1845, independently of each other, arrived at the same conclusions, based on Steenstrup's discovery, that the cystic worms were abnormal states of the tapeworm; but Küchenmeister showed, by direct as well as inverse experiment, that this was an error: that the cyst was indeed the larval form from which the embryo was detached. His experiments served to demonstrate the important truth that, as apparently analogous cystic forms were observed occupying different parts of the body of sheep and cattle, they were in reality legitimate stagal forms or developments of different varieties of *Tænia* or tapeworms, the adult stage of which are only found in the intestines of man and the dog. On the other hand, it is now a firmly established truth that the tapeworms of the ox and sheep have no affinity with cystic forms which cause the disease under consideration; they are indeed special varieties, the cystic or larval forms being unknown at the present time.

A few years after the discoveries of Küchenmeister were made known, Baillett of Toulouse entered with spirit into some investigations relative to the question of sturdy. He not only confirmed the conclusions of Küchenmeister as to the existence of various cystic or larval forms, representatives of distinct species, but showed that the dog harbours in his body at least three of them, viz., *Tœnia cœnurus*, *T. serrata*, and *T. tenuicollis.* Within more recent date Dr. Cobbold, in this country, has added a fourth, *T. cucumerina.* The subject has also been further elucidated by Professor Gamgee, who was probably the first British veterinarian to confirm by direct experiment the conclusions arrived at by Von Siebold, Küchenmeister, Haubner, Leuckart, and others. The summary of the labours which represent all that has been carried out is briefly as follows:—In 41 experiments 50 dogs were employed, and these were fed on *cœnuri* from the brains of sheep, 33 becoming affected with tapeworm. From one cyst alone 400 tapeworms were developed; and from the fourth part of a cyst 191 tapeworms originated, the time occupied being less than a fortnight, when they were about one-tenth of an inch long. In the third week they attained one inch, and by the end of a month they were four inches long. At the end of five months the worms had grown to the extent of 24 to 30 inches, but some were found to be equally developed at the end of three months.

In order to prove the hydatids of sturdy are developed from the ova of the dog's tapeworm, 39 sheep and 2 calves were chosen, to which the joints of *T. cœnurus* were administered. Of these 22 became affected with sturdy. The signs of the disease were exhibited as early as seven days in some, but in others they were delayed as late as two and even four months, probably owing to adverse states of the worm or ova, or unfavourable conditions of the sheep.

These investigations having been repeatedly carried out, and inevitably yielding the same results, we are in a position to comprehend the emigration as well as migrations of the entozoön, and direct our efforts with especial benefit towards a mitigation of the evils resulting therefrom. We are now certain that of the number of tapeworms infesting the dog, one only, *T. cœnurus*, is capable of propagating sturdy in sheep. This parasite varies in length from 20 to 50 or even 60 inches when fully developed, and below the head is composed of a series of segments or joints—proglottides—separated by well-marked transverse striæ or constrictions. Each joint when matured is capable of containing hundreds and even thousands of ova, one of which so charged is detached or dropped off from the caudal or tail end from time to time; the scolex or head of the adult worm being secured to the walls of the intestines by means of its powerful hooks. The joint, left to the action of the juices of the intestines, liberates the ova which are distributed with the feculent matter over the herbage comprising the food of the sheep, and are swallowed by them. Having reached the stomach, the ova commence their future development. By means of a boring apparatus* they gain the circulation, and are carried to various parts of the system, some taking up their position in the brain, which appears to be a suitable habitat. Here, as in any other part of the sheep's body, it can only develop the larval or cystic condition, the mature form being completed only in the dog. Arrived at the brain or spinal cord, the ova enlarge and form a cyst or bladder, varying in size from a pea to a pigeon's or bantam's egg.† This is simply a vesicle or bladder distended by a clear, yellowish or pale yellow albuminous secretion, and on the outer side are visible a number of microscopical objects which exhibit signs of active life by contraction and elongation, as well as by diligent use of the hooks with which each is provided. These tapeworm heads, as they are called, are capable of rapid growth and development, and by such, together with the vigorous action referred to, destroy or cause to be absorbed the substance of the brain with which they are immediately in contact, and thus for a time space or accommodation is provided for them. It is, therefore, during the growth and action of these protruding bodies that the violent convulsions are produced in the suffering host, a cessation of which only arises as the brain recedes by absorption. To such violence is also due the congestion and impediment to blood circulation, which assist in the production of stupidity, blindness, stiffness of gait, loss of co-ordinate movement, and final paralysis.

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* The tissues of young animals are easily pierced, older ones with difficulty, by the apparatus referred to, which consists of a set of peculiar hooks. Each ovum or egg is from the first supplied with them. A knowledge of these facts assist us to understand why lambs and young sheep are affected to the exclusion of adult animals.

† It is stated by Dr. Cobbold, who quotes Leuckart and Numan, that when a cyst forms in the spinal canal it may accumulate to the length of a foot, being doubtless directed to the poles by pressure derived from the osseous walls.

For a time the tapeworm heads remain within the cyst, from the inner surface of which they are developed by a process of internal budding—gemmation; but after a time they become exsertile or protruding from the outer wall fully armed with hooks and suckers, congregating in many instances to the number of many thousands. As far as the sheep is concerned, they are incapable of further development, and as long as they occupy their present position they are also unable to propagate their species. If the life of the animal could be prolonged to an indefinite time, they would still remain as they are—immature parasites, carrying on their destructive work. The next stage of development must be accomplished elsewhere; they wait, therefore, only to obtain their exit from their birthplace and enter the stomach of the dog, which is accomplished in various ways. When the affected animal is killed, the head is thrown as food to the dogs; if it dies, perhaps the whole body is similarly disposed of. When the hydatid escapes during the usual suffering, assisted by the softening and ulceration of bone, skin, &c., it is swallowed by the dog; indeed, it makes little matter what becomes of the body, the ever-attendant dog as a rule becomes possessed of the tapeworm heads, one or more of which arrive at maturity within his body, forming the *Tœnia cœnurus*, when the same order and sequence of change, growth, and development proceed as we have attempted to describe. These facts have been so often proved by daily observation, as well as by direct and inverse experiment, that no doubt is entertained except by strongly prejudiced and ignorant persons. We therefore arrive at the conclusion that, as long as the association of different animals is allowed, especially with such carrion-eaters as the dog, the propagation of tapeworm hydatids will be ever certain and even dangerous, not only to sheep and cattle, but also to the consumer of their flesh as food.

The question of public health is now being more fully understood and admitted as depending upon the health of stock. We are therefore reminded of the necessity for an efficient veterinary supervision of animals intended for slaughter, as well as examination of the carcases of those sent to the markets and butchers' stalls generally. For the fulfilment of the first we need well-trained veterinarians, to whose care the stock on the farms of a certain district should be entrusted; and for the second, the closing of all private slaughter-houses throughout the kingdom. It will always be found a more profitable proceeding to investigate with the view of preventing, instead of curing, disease arising from wide-spread causes, such as the numerous forms of parasitic diseases, as well as the destructive enzootic and epizootic affections. We have our medical officers of health. Why not veterinary officers also? The present plan of appointing resident practitioners by the local authority as inspectors under the Contagious Diseases (Animals) Act, 1878, is sufficiently proved to be bad policy—a penny-wise and pound-foolish system. No man can, nor will, serve two masters; so with apathetic local authorities, and inspectors who do not like to act injuriously as informers against their own clients, disease in numerous instances is neither reported nor arrested. If such men were appointed and paid by Government, three times the work could be extracted from them for the same money, and the rural districts, under present arrangements, almost, if not entirely deserted, might receive their services, and secure the annual saving of thousands of pounds.

Post-mortem Appearances.—We have already alluded to the external states of softening which attend the superficial location of the hydatid, *T. cœnurus.* These indications, as in life, form the means of immediately directing the attention after death to the precise spot. In those cases where they are absent the brain must be entirely exposed, as the hydatid will be found at the base, in front within one or both optic lobes, or within the ventricles, &c. In whatever situation the hydatid will exhibit the characters already described, and when more than one are present, they will vary of course in size as well as form. From their being partly imbedded within the brain substance, a reddening from consequent inflammation will be found, with more or less exudation of yellow material. In later stages the congestion will be general, as well as local and intense, and softening of the brain substance not infrequently present. The fluid within the ventricles is also probably increased. Abortive or encysted and undeveloped ova are found in various parts of the body, as in the walls of the intestines, œsophagus, on the surface and within the substance of the heart, diaphragm, &c. These appear as small whitish-looking tumours, a mass of tissue having accumulated around them, and usefully serving the purpose of arresting their further migration, and in process of time would secure their destruction by calcification if the host is allowed to live.

The possibility of the ova of *T. cœnurus* being distributed over the body of the sheep, at once admits of its easy introduction to the human stomach, the flesh so affected being known as "measly" mutton. It is, however, soothing to be informed that "measly" or "giddy mutton" is not dangerous if properly cooked. The meat should be well done from surface to centre under all circumstances; if this is secured the parasite will be destroyed.

In advanced cases of sturdy, the system will exhibit the bloodless state; the flesh being pale, flabby, and perhaps watery. Local dropsies and congestion of the lungs and liver may be present; probably also dilatation of the right side of the heart. Such signs are, however, not constant, as the short life of the sufferers do not admit of their development.

Preventive Treatment.—As the origin of the disease is pre-eminently due to contact with dogs, the attention must be constantly and specially directed to them. All useless animals should be destroyed and their carcases burned, as one way of limiting the prevalence of the worm. In the disposal of "giddy sheep," none of the parts should be given to dogs under any circumstances. It is best to remove the head, carefully avoiding any loss or distribution of the hydatids and tapeworm heads for dogs to pick up, and totally destroy it by fire. In the removal of the cyst by operation, &c., the same care should be exercised. All dogs, whether employed as sheep dogs or not, should be regularly treated with well-known remedies, as areca nut, male shield fern, kousso, &c., in order to expel the tapeworm from their bodies, during which time they must be kept in close confinement, in order that the excrement may be collected, examined, and finally burned. Besides ova, the head of the worm should be expelled; without this the discharge of ova will go on as before. Tapeworm joints, says Cobbold,* have the power of crawling from the anus of the dog and attaching themselves to the hairs on his sides, &c., and the first time he enters a pond they are transferred to the water, and to the danger of animals slaking their thirst. Besides, as long as the dog is suffered to harbour various forms of tapeworm and distribute the eggs, not only sheep and calves, but other animals, as the fox, hares, and rabbits, &c., are likely to assist in their further spread. Thus the sources are rapidly multiplied. They reach food and water, and are carried by the countless agencies in a thousand ways, unseen, unheard, and rarely thought of, until fearful havoc is the result.

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* *Internal Parasites of Our Domesticated Animals*, p. 95.

THE DETERIORATION OF MOUNTAIN PASTURES, AND SUGGESTIONS FOR THEIR IMPROVEMENT.

By PATRICK R. LATHAM, Bridge of Allan.

[*Premium—The Medium Gold Medal.*]

IT is nearly thirty years since the deterioration of hill grazings was first brought under my notice by some old shepherds in the highlands of Inverness-shire. They had come from the Borders early in the century, and had served the same flockmasters, or members of their families, during the greater part of their lives. Having been long resident on the same farms, they had opportunities of observing the condition of grazings at the outset, and the changes they had gradually undergone. This led to a personal inspection of a number of old croft lands, sheilings, and meadows, which it was alleged had changed their herbage and become less productive, and from all I saw and heard it was evident the assertions of these intelligent shepherds were well founded. It was certain we were now getting far ahead of the cattle period, which may be said to have come to a close towards the end of last century. The mountains which had been converted into sheep walks at that time, and kept comparatively free of cattle ever since, were now depastured by a class of animals whose habits were entirely different. The ox crops so high, and leaves so much grass after him, that our mountain pastures formerly presented a much more luxuriant aspect than they now do,—resembled the deer forests of the present day in all likelihood more than our closely-clipped sheep walks. I am not prepared to give the relative proportion of cattle then to sheep now. But it has been estimated the difference of rent to landlords under the sheep system is as three to one; and of late years I have no doubt the proportion has been been much greater.

Were any excuse needed for enlarging on the subject of this paper, the increased value of sheep farms, and the greatly enhanced demand for mutton alone, should be a sufficient justification, as these are now undoubtedly matters of great national importance.

I do not purpose going into any detail as to the varieties of cattle that formerly occupied our Highland glens, nor as to the south country "long" and "short" sheep,—the primitive cognomen of cheviots and blackfaces which succeeded them. Suffice it to say, cattle being more gregarious in their nature than sheep, and ever disposed to range far and wide, must always have left quantities of grass unconsumed, just as we see in the case of a ryegrass hay field set apart for cattle, and unquestionably with the same beneficial results. From what may be seen on farms chiefly devoted to cattle in Argyllshire, in our own day, we have further proof of the large amount of herbage which has always been left where it grew to wither and decay. Besides, the excrements of the animals remain where they feed, and in this way the various properties withdrawn from the soil are duly restored. I think it is therefore self-evident a fertilising process of this kind had been constantly in operation during the cattle period.

Then let us look into the state of our sheep walks *now* as compared with their condition when sheep were introduced. It is unnecessary to enter into any wordy argument to prove that the present system of depasturing our mountains has impoverished the soil, and at same time altered and materially diminished the amount of herbage, as that is now a generally recognised fact. The habit of the sheep being to feed low down, and then ascend to some bare hill top, or rocky eminence, to ruminate and repose, or, it may be, in stormy weather, to seek the shelter of the nearest ravine, it is quite obvious a great proportion of the droppings of the animals are left in these situations, and never returned to the ground they came from. On the contrary, large quantities of dung are dried up in droughty weather, and blown into the nearest recess or burn, and completely lost. When we further consider the number of breeding ewes maintained, and the amount of mutton and wool which our Scotch mountains annually produce, it is not difficult to perceive they are undergoing a process of impoverishment,—in other words, are in course of being slowly but surely robbed of many fertilising properties, especially of their phosphates, and that to such a degree as (without a remedy) must, in course of time, render them comparatively unproductive. The sheep cut close, and but for the circumstance of their leaving a certain proportion of manure where they feed, the present system of grazing our hills would not be very different from that of perpetually mowing a field, and carrying off the grass without making any compensatory return.

Before going further into this part of the subject, I may premise that all writers on chemistry are now nearly agreed on the elements that enter into, and are indispensable to, the growth of plants. Some of these being gaseous, are to be found in both the atmosphere and soil, while the remainder, for the most part, are confined to the soil alone. These elements, as most people know, are termed organic and inorganic, the former being the combustible part of the plant, and the latter the ash. It is unnecessary to give any technical enumeration of all these properties. Suffice it to say, that most of them are comprised in the ash. And it has been proved at Rothamsted; and most practical men must have observed the fact in their own experience, that where crops have been grown for a number of years on the same land, and systematically removed without making any return, or a very inadequate return, of the mineral substances contained in the ash, the soil became exhausted.

I have seen a striking instance of this where a flockmaster paid little attention to the arable part of his farm. It was good sharp land, originally well fenced off from the grazing, and worked on a five-course rotation. He kept a number of cattle, so many that they could have consumed double the quantity of fodder and green crop which the land produced. They had no artificial food ; nothing but straw and water in winter, and what they could gather on the hill side,—the small crop of turnips being usually reserved for weak sheep in spring, with, it might be, a small modicum of roots for the milch cows. But the eild cattle got none. In this way the farm-yard dung made in winter was not only extremely small in quantity, but of the poorest description. In fact, both cows and young cattle were chiefly grazed on the sheep run, and left a great part of their dung there; and the intermediate fences of the arable fields being insufficient, even the sheep depasturing the parks were turned out to the hill at night as well as cattle when the crops were growing. The only manure employed was that made on the farm, and the result was the gradual reduction of the soil to a condition of sterility. So much was this arable land exhausted that it wasted and shrank to such a degree that boulders cropped up, and the fields looked as if they had never been sufficiently trenched !

And more recently I observed the same process of exhaustion at work in a different form, and under different influences, on another farm in the lowlands. It was what may be called an arable grazing holding, subdivided into large parks, and comprising in the aggregate nearly 500 acres. The greater number of the fields had been reclaimed upwards of twenty years ago, and laid down to grass with a heavy coating of lime, which, when incorporated with the soil, and the large proportion of rough organic matter which it contained, had not only the desired effect of pulverising the soil, but of producing in due time a good sward of grass. The fields were diversified in character,—some of them being of a peaty description, while others were a fair loam, and the rest (the greater number) of poor quality resting on a subsoil of till and gravel. The whole farm had been judiciously fenced and drained, watered and laid down to grass, by an intelligent and thoroughly practical steward, who farmed it for the proprietor for many years. But although the stock was mixed, that is, comprised both cattle and sheep, the former were usually grazed on the deep land, while the latter depastured the thin, and as the sheep stock (before the farm was let) generally consisted of a hirsel of breeding ewes, the fertility of this section of the farm soon began to decline. It was evident from the increase of moss, and otherwise, the phosphates had been, or were, in course of being carried away, and at the end of seven or eight years from the commencement of the tenant's occupancy, the contrast between the appearance of these lands and the deep loamy sections of the farm, as well as with the aspect of the light lands themselves, at first, was remarkable. I have no hesitation in saying the same process of impoverishment as that which is now exhausting our mountain pastures was here in active operation. It was different, however, with the deep loams. There the mineral properties of the soil were retained, and from the different system of management pursued, it was evident these lands were as fertile as ever. In fact, by hand-feeding cattle (and occasionally sheep) on these fields with cake and corn, one or other of them was reserved and cut for meadow hay every year, and yet they manifested no change; the luxuriance of the pasture continued.*

Now all this goes to show that too little attention has been bestowed heretofore on the management of grazing farms, and that many sheep walks are highly susceptible of, and are undergoing a process of deterioration to a greater extent than is generally believed. For, as the late Professor Anderson said, "we can only maintain the fertility of the soil by returning to it all the substances which the crop removes, and we can increase it by applying these in larger quantity."

In conversing with some experienced men on the gradual decline of mountain pastures, they did not seem to think the cause so manifest as the writer, and believed the increase in the growth of moss was in great measure to be attributed to the change in the seasons. They seemed to imagine we had more rain now than formerly, and that wet was as conducive to the growth of the weed as the absence of those properties which were annually removed in milk, mutton, and wool. But the question is not one of climate, and while acknowledging that wet does promote the growth of moss and peat, yet it is clear that poverty, and not incessant rain, is the true cause of the change and scantiness of the herbage of our green-land hill pastures.

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* The late Professor Johnston states, that in a four-course rotation of cropping he found an acre of land lost 1284 lbs., or about 11 cwt. of inorganic matter, and that the following ingredients would require to be returned to the soil every four years to maintain its fertility:—

	lbs.
Dry pearl ash, ...	465
Common bone dust, ...	552
Epsom salts, ...	326
Common salt, ...	116
Quicklime, ...	70
	1529

or better than 13½ cwts. in all.

And as regards climate, notwithstanding all that has been advanced on the subject of the alteration of the climate of this country, say during the last 100 years, it will be found on comparing the seasons, or remarkable weather, of this period with that of the century immediately preceding, that the difference is a mere bagatelle. No doubt, of late years we have had some very stormy winters, and extremely wet and ungenial summers, what may well be termed unnatural, as they certainly proved to be very disastrous seasons; but there is good reason to believe our forefathers were subjected to the same vicissitudes of weather, or something very similar.

Then comes the question of renovation. How can the fertility of our worn-out, or at least seriously impaired, mountain sheep walks be restored? Although much has been done by enterprising individuals during the last forty years towards the amelioration of mountain pastures by carrying out a system of drainage and top-dressing, there is still much to overtake in this direction, as well as in affording shelter and adopting a more judicious and better defined method of moor-burning than that which is now usually practised. Considering the benefit that has already accrued from these operations, as has been so fully and satisfactorily demonstrated by several contributors to the *Journal of Agriculture* and the *Transactions of the Highland Society*, the wonder is that such remunerative improvements have not made more rapid strides. The severity of the seasons, the steady decline in the value of wool, and the fluctuating demand for store sheep, of late years have, undoubtedly, had a paralysing effect. So many unfavourable circumstances coming often together have militated seriously against the interests of flockmasters, and in many cases greatly reduced their capital. Permanent improvements of all kinds have consequently devolved almost entirely on proprietors, and, as might be expected, even they have been slow to effect any but those which could not be conveniently postponed. But the question remains,—Is it not worth while to make arrangements with hill farmers, even in adverse times, for the improvement of mountain sheep walks, when it has been found (as I shall endeavour to prove) that the profit arising from the process has, in most cases, quadrupled the annual cost or interest on capital expended? Besides a gain in quantity and value of wool and carcase, the annual mortality is invariably diminished by such improvements. I have found in my own experience a cheviot sheep stock gradually increased in number, as much as 10 per cent., from the operation of draining, and adopting a better system of moor-burning alone.

One way of improving moss-grown green-land, as it is called, has been suggested, that is to enclose and put it under a course of tillage,—to take a crop of oats and turnips, the latter being consumed on the ground, and then lay down to grass without a white crop. A very good plan seemingly, and such as I have no doubt might be adopted in some localities. But as a rule it would not apply to large grazings, and could not be carried out anywhere to any great extent, because the fencing of the numerous old croft lands and sheilings, to say nothing of other and wider reaches of the hills, would prove so formidable and expensive an undertaking that the outlay, considering the exposure of the crops to game and weather, would not be recouped.

Another plan has been tried, and that is to feed the land through the sheep, or the animal and the soil simultaneously. On consulting Mr, now Sir J. B. Lawes on this subject (so long ago as December 1861), I find he said: "On the whole, I am inclined to think that hill land could be improved more economically by the consumption of artificial food than by direct manures. I estimate the value of the manure from 1 ton of some of our foods to be worth from £4, 10s. to £6, 10s.: the difference between this and the cost of the food itself could surely be recovered in the animal. Instead of sending the stock to the lowlands for winter keep, I do not see why they should not remain at home, receiving say ½ or ¾ lb. daily of cake, and what they could pick up on the hills." Considering the scarcity of good grass wintering, and the great expense of wintering of any sort, I have often wondered that this method of wintering at home has not been more extensively practised. Turnips are not the most desirable sort of keep for young sheep, and when one takes the cost of say five or six acres per 100 into account, this being about the usual quantity allowed during the winter months, the outlay is enormous on a large flock. I have no doubt rape, cotton, and poppy cake would answer as well; and when the benefit that would follow to pastures, ease to stock, and the saving of herding and driving expenses is considered, I think the plan preferable to wintering in the lowlands. The system would work best where parks and green outruns were available, as this would not only facilitate the handling of the hoggets, but likewise present a surface highly susceptible of improvement from their manure.

I have seen instances of this method, or something like it, practised in the south of Scotland, where the hill grazings were comparatively circumscribed, and the arable farms attached pretty extensive. In these cases the whole stock received a liberal supply of artificial food, in winter and spring, on the low grounds, and were thereafter turned out to the natural pastures, and the effect thereon was marvellous. The change of food appeared to agree well with the sheep, and altered the quality and quantity of the herbage of the grazings entirely.

Then there are the various methods of improving pastures by the application of foreign substances to the surface, or what is technically termed top-dressing.

It is hardly necessary to refer to the conflicting opinions of writers as to the best remedy for the renovation of old hill grazings, further than to say the depreciation in the herbage being the result of impoverishment, many kinds of restoratives may be beneficially employed, and that such as can be most readily procured and most economically applied should not be lost sight of, where, as must almost always be the case in mountain pastures, a course of tillage is impracticable. It is equally superfluous to give any botanical definition of the coarse herbage or weeds which have taken the place of the finer grasses, as these are generally familiar to most farmers. Mosses, sorrel, bents, heath, and rushes will be found in localities congenial to them, and all that has to be borne in mind is that thin and deep soils, or what may be termed dry croft lands, and moist mossy-meadows, as well as the slopes of the green mountain sides, will require different treatment. Whatever substances may be employed, the quantity and quality of them must necessarily vary, and be suited to the subject to be improved.

Many years ago I had occasion to improve the appearance of a lawn, which had been so completely spoiled by frequent mowing, that it carried nothing in a dry summer but a sward of moss. The soil, which was naturally thin, resting on a foundation of gravel, obviously wanted thickening. On looking about I saw there was a deep deposit of calcareous soil in an adjoining lake. It was lying in a shallow bay, and at low water I had a large quantity of it dug out, and, after being thoroughly pulverised, transferred to the lawn, and laid over the surface as evenly as possible, better than 2 inches thick. The deposit being obviously formed from the washings of the adjoining hills, which comprised quantities of limestone and trap, was well suited for the purpose intended, and the benefit which accrued in a year or two was remarkable, nor did the surface dressed fail to present a fine dark green sward for many years. After being well washed in by the rains of winter, the lawn was bush-harrowed in spring. The application, however, was for the sake of effect, and not by way of experiment, otherwise it would have been gone about more judiciously, as I saw afterwards the alluvial soil used, containing as it did a considerable quantity of organic matter, would have been all the better of an admixture of lime. Though not always convenient, such moss-grown lands as these should, I think, as a rule, be enclosed during the summer before being top-dressed, and kept free of stock, especially where the compound contains the usual quantity of lime, as the crop of grass left on the ground would add more or less to the amount of organic matter, and thereby render the compound all the more efficacious. The expense was increased by carrying the alluvium across the lake in flat-bottomed punts, and, as far as I can remember, was about £3, 10s. per acre. I mention this source of supply because highland lakes abound in these alluvial deposits, and I believe there can be no better material for forming earth and lime composts.

Of course, a knowledge of the geological structure and composition of the mountains should guide the improver of deteriorated pastures to some extent, as well as the physical aspect of the herbage; for where the superincumbent soil of the heights rests on or is intermingled with veins of limestone and trap, a smaller quantity of lime will be needed. Indeed, I have known situations where the spade of the surface drainer was the great desideratum, if not the only thing required. But much will depend on the conformation of the hills, and the lie of the lower and deeper lands, as it is quite possible—nay, often happens—that much disintegrated limestone and trap pass away into the nearest mountain burns. It has been observed that one of the evils of over-draining has been the carrying away of disintegrated mineral matter from the limestone and trap of the higher ranges, and thereby preventing the natural deposit of calcareous earth on the slopes and meadows lower down the mountains; this result being usually indicated by an increase of moss on the lower side of the drains. It is in such elevated situations that a system of irrigation has been recommended, but it would surely be better not to drain so high up, or to substitute tile for ordinary open drains in these localities. In fact, this is a species of draining which, though more expensive than the other, is preferable in many situations. Wherever the subsoil is so free that the action of water would have a tendency to dig and enlarge open drains, or where the periodical washings of calcareous matter from the heights would improve the pastures below, tiles should always be adopted. Such drains are also safer than open drains where breeding hirsels are kept, as well as where there may be weak sheep at any season of the year.

It is not always convenient to procure large quantities of clean earth, that is, soil free of the roots and seeds of noxious weeds, for the purpose of making composts; but besides the deposits of silt which are to be found in the creeks of lakes and rivers, banks of deep soil, the casting of the surface of new roads, overgrown headlands, and road scrapings are common enough, and well suited for such formations. The quantity of lime required will naturally be suggested by the quality of the soil and herbage which it is intended to improve, and may range from 1 to 4 or 5 of earth, or, where phosphates are very deficient, may be still richer in lime. I have applied a top-dressing of earth and lime, in the proportion of 4 loads of the former to 1 of the latter, to a section of low-lying hill pasture, at the rate of 25 cart loads per acre with the best possible effect. The soil was the casting of the surface of a new water-course passing through an arable field, and the limekiln being on the spot, the cost of the application was moderate;—it did not exceed £3 an acre.

It is supposed by many practical agriculturists that lime is equally efficacious when applied to moorland and rough pastures, after being slaked for some time, as it is when laid on in a caustic and fine powdery condition. We have seen lime-shells laid down over such grazings in heaps, and left exposed to the elements for months after being slaked,—so long, in fact, that the lime became so clammy and adhesive that it could hardly be spread. Now, I think it consists with reason that where the mineral is required to take immediate effect it can be much more uniformly scattered over the surface when dry—that the powder then sinks readily into the soil, combines with the acids therein, and acting, as it must, on dormant humus, organic and mineral substances, commences the process of amelioration at once. Hence, in liming a large park on one occasion, partly for the sake of experiment, I preferred using caustic lime for the greater part of it, and found it had a quicker and more decided effect than either mild lime or earth and lime compound. This enclosure was a section of low moor, comprising a variety of herbage, and, with the exception of 8 acres, which had been cultivated at some early period, was in a natural state. It contained knolls of heather, and several acres of marsh. After surface draining I applied about 6 tons of hot lime to the acre of the most of the rough ground, leaving a small portion for mild lime, and nearly the whole of the croft land for the compound, which was composed of about 5 loads of old turf and earth to 1 ton of lime, and laid on at the rate of 25 loads per acre. The effect of the dressing, in the course of a year or two, was astonishing. The heather all but disappeared, and while the bog land threw up fine grasses in room of the rushes, spritts, and aquatic plants which formerly prevailed, the old mossy croft land presented a fine green sward. I used this enclosure for young and weak grit ewes in spring, and thereafter for such of the stock as required attention; and have no hesitation in saying its utility and productiveness were quadrupled by these operations. The compound, requiring as it did nearly twelve months to rot, was thoroughly incorporated with the lime by frequent turning, and applied early in March.

It is almost unnecessary to remark that draining, the first and all-important step in the improvement of arable land, is equally necessary on the hills, where the pastures are to be renovated by an application of lime, or bones, or phosphatic manures of any kind, as without this precaution much of the top-dressing would be wasted.

Shell sand has been largely and profitably employed in the renovation of pastures, and should be used to a still greater extent. It helps to kill moss and weeds, and when laid on sufficiently thick will tell well and last long. I have used quantities of it with good effect on natural and sour pastures. When applied immediately after reaping a hay crop it makes a marked impression, and increases the aftermath. In the year 1848 the late Professor Johnston reported that no less than 7,000,000 cubic feet were employed every year in the county of Cornwall; and we have the same authority stating—"On the western coast of Scotland, and on the shores of the island of Arran, and of the Western Isles, this shell sand abounds, and is applied extensively, and with remarkably beneficial effect, both to the pasture lands and to the peaty soils that cover so large an area in this remote part of Scotland. It is chiefly along the coasts that it has hitherto been extensively employed, and it is transported by sea to a distance of 80 or 100 miles. . . . In the island of Barra alone there are four square miles of shells and shell sand of the finest quality, and of an indefinite depth. . . . When covered with a dressing of this shell sand, the surface of the peaty land becomes overspread with a sward of delicate grass, and the border of green herbage that skirts the shores of these islands in so many places, is to be ascribed either to the artificial application of such a dressing, or to the natural action of the sea winds in strewing the fine sand over them, when seasons of storm occur." One great recommendation to this calcareous sand is that it can be had for the lifting. Were it more expensive than the carriage, probably it would be in greater repute, and be more extensively used.

There are also infusorial sands on the Normandy coast containing organic matter; and compounds of limestone sand and gravel in Limerick, and elsewhere in Ireland, which might be advantageously employed to either the green or bog land of that country. The usual dose for an acre is 10 to 15 tons, but it may be increased on heavy argillaceous soils to 20 tons.

Before animadverting on the use of artificial manures and lime, I may refer to the famous instance of the "Cheshire pastures," which had been so thoroughly robbed of their phosphates that it was resolved to top-dress them heavily with bones. The quantity applied was about—certainly not under—30 cwt. per acre. The money value, at any rate, was £10, and the grazings were so completely restored by the dressing that they speedily became more productive than ever, and continued to be so for a long period of years. Although in a flat country, and depastured by cows, the condition of these pastures was almost parallel to that of Highland sheep walks. The phosphates in one case had been carried off in the milk of cows, and in the other in the milk of ewes, and in mutton and wool. There was also similarity in the loss of manure. The cows carried a large proportion to their byres, and the sheep to their resting-places, as I have already shown, and in neither case was there any manure returned to the land, except that which was left by the animals while feeding. The profit which accrued by the renovation of these pastures was 100 per cent., that is to say, they brought double the rent which they realised in their exhausted condition.

Another cheap and simple method of improving low-down pastures, no matter whether natural or sown out, is dissolved bones reduced to a paste by sulphuric acid, and thereafter diluted with water or liquid manure. The quantities required are four bushels of bones to 160 lbs. of vitriol, and 1000 gallons of water to the acre, laid on with the liquid manure cart; the cost being about 30s. But where moss prevails, it is necessary to apply a sprinkling of nitrate and sulphate of soda, as evenly as possible over the surface, in the proportion of ¾th cwt. of the former to ¼th cwt. of the latter, before laying on the fluid bones. This will cost about 12s. additional, or 42s. per acre in all.

For a more permanent improvement of moss-grown pastures, I have used the following mixture on sharp silicious soils, namely, 1 cwt. nitrate and ½ cwt. sulphate of soda, along with 1½ cwt. fermented bones, and 1½ cwt. Bolivian guano. When used (early in March 1867) these cost about £2, 5s. per acre, and the yield of grass was abundant. The season was favourable for the absorption of the compound. By lambing time the top-dressed lands presented a dark green hue, in remarkable contrast to the fields which had not been manured. Even at that early period there was a considerable flush of new grass in the one case, and little or none in the other; and as the season advanced, I was able to place a third more than the usual number of ewes and lambs on the manured parks. Moreover, these sheep throve better than the stock of the other fields, and in the course of a year or two, besides maintaining their fertility and more stock, the moss on the dressed land had nearly disappeared.

Where bones alone may be deemed the most necessary and judicious description of manure, as in the case of the "Cheshire pastures," a certain proportion of ammoniated manure, such as Peruvian or Ichaboe guano, might be added for the purpose of immediate action on the herbage. Twenty bushels of half-inch bones, and 1¼ cwt. Peruvian or 2 cwt. of Ichaboe guano, will be found a good dose for restoring exhausted pastures to a condition of fertility for many years, and the expense should not exceed £3, 15s. per acre. No doubt, a larger quantity of the compound would be required for argillaceous and deep soils. But where money is a consideration, the outlay need not exceed £5 per acre anywhere, and the smaller expenditure will he found sufficient for all ordinary light land pastures.

As regards the durability of bones, the reporter on the Cheshire pastures says he manured one part of a mowing field with bones, 35 cwt. to the acre, and the land has produced a good crop of hay ever since, quite equal to the other part of the field which had been manured with good farm-yard dung every two years. "Once in eight or nine years is quite enough to manure mowing lands with bones; and I am quite certain that pasture lands on which bones have been applied never will (so long as they remain in grass) return to the state they were in before the bones were applied." But although pastures treated in this way should remain fertile and nearly as productive as ever, as is alleged, for any length of time, the great expense would seem to imply the propriety of confining the system to grass parks, or meadows reserved for hay.*

Reverting to lime, which has ever been regarded as "the basis of all good husbandry," the mineral will unquestionably continue to hold a high place as a manurial agent in the future. But, as might naturally be supposed, it has operated with more marked effect in some situations than others, and experience has proved that a large application, where lime is needed, is preferable to laying on small quantities now and again. Many graziers begin to doubt the continued efficacy of lime, because after the lapse of twenty or thirty years they have found a second application had not the same effect as the first. On the contrary, they say it is invariably disappointing. But when one reflects on the action of lime on the acids of the soil, and how, after these are gradually disengaged, both organic and mineral matter are converted into plant food, as well as some of the acids themselves, the circumstance is only what might be expected. The pastures would ostensibly require to rest for a long period of years, until, in fact, they were again surcharged with vegetable and mineral substances, before re-liming could produce the same beneficial results. How long such lands would require to remain in this abnormal condition (which would depend very much on circumstances) has probably never been ascertained. And the question which practical graziers at the present time cannot decide is what manure, other than lime, they should next apply. A different manure is obviously needed, and the natural inference is, it should comprise all the ingredients which had been utilised by the first application of lime. Many have resolved to try bones. But to those who have not already used them, one may be allowed to suggest a word of caution. I should imagine a due admixture of potash, magnesia, and one or other of the nitrogenous manures I have already recommended, might be needed. And if it were possible to add organic matter to the surface by enclosing the pastures for a time, and keeping them rough before being top-dressed, or otherwise, so much the better. Or would it not be more prudent still, in a moot case of this kind, so fraught with importance to the grazier, to call in the aid of science, and consult the chemist of the Highland and Agricultural Society? Better to do this than try the experiment, for it can only be an experiment to use bones after lime, without any other fertilising auxiliary. If a given quantity of bones per imperial acre would answer as well as the same value of lime for a first dressing of hill pastures, it might be desirable to use them, because the bones are much more portable and more easily applied. I have been informed 16 cwt. of bones, costing about £6, 8s., were equal to the quantity and value of lime which had been so largely used in improving hill pastures in Dumfriesshire upwards of twenty years ago; and if I mistake not, some of the graziers in that district have been substituting bones for lime, but I can see no good reason for believing that bones alone can have the same effect after lime that they would have had where lime had never been employed.

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* Sir J. B. Lawes believes the Cheshire pastures would not have been so much benefited by this heavy application of bones had the soil not been rich in potash.

Mr. James Porter, Monymusk, Aberdeen, contributed an able paper to the *Transactions of the Highland Society* in 1861 on the top-dressing of pastures with lime, and although not coinciding in all his views, I may quote what he says regarding the treatment of deep land, namely, "For this description of pasture land, particularly where the soil is rich in vegetable matter, and inclined to clay, powdered lime has the most powerful effect in renovating the grass of any substance I have ever tried. It at once cleans the surface, kills insects, decomposes decaying vegetable matter, and raises a close sward of sweet nutritive grasses, including considerable quantities of white clover, and cattle will prefer the grass growing on the limed land." Nothing can be more correct than these sentiments, and they have been confirmed and amplified by the latest emanations of scientists. For instance, Sir J. B. Lawes says: "The first application of lime to moorland, or to pastures which are deficient in lime, is often followed by a growth of white clover, so abundant as to have led some to the conclusion that the plant was spontaneously generated in the soil. But lime in many soils is by no means abundant, and if the supply is insufficient, a liberal dressing is essential, not merely for the purpose of furnishing the lime which the plant takes up, but also to enable the roots to be in constant contact with that substance. Lime also acts as the medium by which the nitrification takes place, and the almost entire absence of nitrates in the water passing through peat soils in Scotland, which abound in nitrogen, must be mainly due to the absence of lime."

But perhaps the most satisfactory account of what has been done in renovating worn-out pastures is that given by Mr. W. S. Macdonald, lately at Springkell, Ecclefechan, in a report to the Highland Society in 1863. Taking Nos. 1 and 2 of the fields improved as corresponding very much, if not in all respects, with old mountain croft land pastures, I find (on analysing what he says) No. 1 was both drained and limed at an expense of £354, 8s. 1d., and that, after deducting 5 per cent. on this outlay from the rent at which the field was let for the next five years, an average of increase of nearly 20 per cent. was gained on the old rent, or 25 per cent. on the sum expended. And as respects No. 2 field, which required no draining, but was limed at a cost of £77, 10s. 10d., after deducting the same rate of interest on this amount from the new rent, an increase of upwards of 35 per cent. was obtained on the old rent, or 40 per cent. on the sum expended. In these cases lime was applied at the rate of 8 tons per acre, and the price was exceedingly moderate, being only 8s. 8d. per ton.

In concluding his report Mr. Macdonald says: "In districts where lime is to be had at anything like a reasonable price, it is the most profitable top-dressing at present known for pasture lands."

I have exchanged letters with several persons who have been improving their hill pastures in Selkirkshire, Roxburghshire, and Dumfriesshire, and regret that they have only written generally on the subject, giving no details as to expense or results. But I may say their experience in draining and liming corresponds with, and fully corroborates, what I have stated in this paper.

Another Dumfriesshire gentleman, who takes a deep and intelligent interest in agricultural matters, writes suggestively of what may be called the all-important question of the hour, namely, whether phosphates, the great desideratum, cannot be applied in more convenient and less costly form to our exhausted pastures than in the shape of either bones or lime? Now that coprolites, American bones, nodules, and crude phosphates of one kind or another can be obtained in any quantity, and at moderate prices, and that it has been proved these phosphates when ground to an impalpable powder are of much the same manurial value as the same materials reduced by sulphuric acid, why not dispense with the acid altogether? On making a calculation of the expense, I find the reduction of bones to the condition of dissolved bones, and of coprolites and American nodules to that of superphosphate, costs about 26s. and 33s. per ton respectively, whereas the grinding of either into an impalpable powder would not be more than 16s., so that a saving would be effected by discontinuing the use of acid to the extent of 10s. per ton in the one case, and 17s. per ton in the other.

It may not be uninteresting to refer to some of the sources of supply of phosphates. The *Charleston Weekly News*, of 12th July last, says:—" Nature has, indeed, dealt kindly with South Carolina. She has the largest beds of phosphates in the world. That grand mine of wealth was known previous to the war, even a hundred years ago, but it was only within the past twenty years that there has been any great demand in this country for phosphates. The beds opened along the Ashley river, convenient to the great works and to the shipping, have returned over $2,000,000 in cash, and yet have only been touched. The same mines of wealth exist in the beds of other streams or swamps along various highways. Scientists have had many a dispute over the specimens brought up from the bed of the Ashley river. Major Willis and other interested parties in Charleston have collected many wonderful specimens and sent many away. There were jaw bones, back bones, ribs, leg and thigh bones of animals, of which the present age has no description. Some are the remains of mastodons, others of great fish and strange submarine monsters. Some lie at the bottom of the rivers, within a few rods of salt water, others miles from the sea under the pines.

" While the wrangle goes on as to how they got there the grinding and pulverising never cease, and the product is being shipped to every quarter of the globe, where fertilisers are demanded. Charleston not only supplies hundreds of points in the south with the bones in bulk or in bags ready to use, but ships to London, Liverpool, Glasgow, New York, France, Germany, Russia, and to other countries. South Carolina has at least $10,000,000 in this work, and has only fairly developed the beds. In the course of the next five years the profits on the capital invested will equal any bank stock."

I may also refer to an essay on the application of finely-ground mineral phosphate of lime, &c., which has been written by Mr. A. R. Guerard of Charleston. He draws attention to the views and experiments of Dr. St. Julien Ravenel, chemist to the Atlantic and Stono Phosphate Works, whose principle was to restore to the land, in economic form, the most important ash elements of plants, those employed being in the form of calcined marl, ground phosphate of lime (containing upwards of 60 per cent. tricalcic phosphate), and alkaline salts from Stassfurt, Germany. These three ingredients were in equal proportions, while it was left to the atmosphere to supply carbonic acid, ammonia, &c. The crops produced by this manure were highly satisfactory. Land which would not grow 8 bushels of oats without manure, averaged under this treatment, over a period of years, no less than 25 to 30 bushels of wheat, 45 to 50 bushels of oats, and 4 tons of good hay, per acre,—the quantity of manure recommended for each dressing being about 4½ cwt. per acre. Dr. Ravenel's experience generally coincides with that of Mr. Thomas Jamieson, Aberdeen, as to the great economy of using finely-divided phosphates over dissolved phosphates, although the latter produce slightly better results. After giving a learned disquisition on the laws of chemical affinity, and the ramification of roots and fibrils in quest of plant food, Mr. Guerard tenders a word of advice to the farmers of the Southern States, and which, at the present juncture, is equally applicable to the British farmer. He says:—"I do not ask or expect you to adopt these views all at once without a trial. I would not impugn your character for common sense or shrewdness to such an extent; but what I do ask and expect of you is a fair trial, and a just judgment on the simple merits of the case. Take an unused or exhausted plot of land, well drained, and try this thing for yourselves, comparing the results with those from your usual system. Do not ask your would-be experienced neighbour, who has tried all manures and systems; do not ask your chemist, who assures you by exact analysis of only so much 'available phosphate;' but go to the land, and ask it the question."

One recommendation of this manure is, that while it comprises most of the elements required for the nourishment of plants (other than those derived from the air), the cost of each and all of them is cheaper than the price at which they can be procured in any other form.

These experiments, however, apply to arable land. And as yet, I may say, I have not been able to elicit anything regarding this new manure as a substitute for lime, bones, or any of the other top-dressings I have been recommending, of any practical importance. But now that the "battle of the phosphates" is nearly over, I have no doubt those engaged in carrying out experiments will not fail to ascertain how far, and in what form, it is suited for renovating the degenerated mountain pastures of Scotland. If the American ingredients which produced 4 tons of good hay per acre should answer as well for our hills, then we shall be in possession of not only a portable, but probably the cheapest and best top-dressing that could be applied.

As regards the varieties of grasses which should be sown, where it is deemed expedient to break up old pastures, all that need be said is, there can be no safer way of making a proper selection than by leaving the matter to an intelligent seedsman, as it is his business to make assortments of the kinds suited to the climate, soil, and altitude of the locality to be sown out.

After improving the surface of sheep walks, the next thing to look to is shelter. It has often occurred to me when engaged in sheep farming, as it must have done to many, that next in importance to draining and top-dressing comes shelter. Very little has been done as yet in this respect; and it is not too much to say, that in carrying out a system of improving mountain pastures by top-dressing in the different ways I have endeavoured to explain, nothing could be better calculated to render the operation complete than a well-devised plan for affording shelter, and preventing stock from descending the 'hills to seek a bield from every blast that may assail them after they have commenced to range at a high altitude in the spring of the year. In a short report which appeared in the *Transactions of the Highland Society* in 1874, "On the Fencing and Shelter of Mountain Sheep Walks," I recommended a system of shelter, chiefly by planting, to which I still adhere, and have little to add. The Duke of Athole and Earl of Seafield have added thousands of acres to the woods which had been planted by their ancestors. And if, as predicted, the white pine of the United States will be used up in the course of twenty years, and it be true that other varieties must speedily follow, where no efforts are being made to replace them, who can estimate the revenue which our large proprietors will one day derive from their immense forests of timber? More recently, the Duke of Sutherland has been planting at Shiness for the purpose of sheltering his new farms there; and that enterprising and judicious estate improver, Mr. G. G. Mackay of Glengloy, Lochaber, in a report on plantations, published in the *Transactions of the Highland Society* in 1880, shows how large areas have been planted at both extremities of his property, and smaller ones elsewhere, for the purpose of affording shelter to sheep. Mr. Mackay "is persuaded that, from every point of view, there is no kind of improvement on an estate at all to be compared with planting. It is at the same time the most beautifying, most beneficial, and most profitable."

Among the many advantages arising from the proper treatment of old croft lands and meadows, is that of reserving one or more of them for hay. This might or might not involve the expense of fencing. I believe enclosing could in most localities be dispensed with, as sheep usually graze at a high elevation during the summer and autumn. But a more liberal application than usual of top-dressing would be necessary to maintain the fertility of the land, and the dressing would require to be periodically repeated. A rough barn or two to hold the hay, or stack yards, would also be desirable. I have seen old dwelling-houses and sheds converted into excellent barns; and where such are not available, suitable erections can always be formed with withes, or what is called wattle walls, roofed in with highland couples and heather. There is nothing so durable for such walls, or warp fences, as the mountain willow; and failing this, hazel is usually to be met with, and plentiful, in most Highland glens. The kind of manure to apply may be left to the discretion of the farmer, if one or other of those already recommended does not suit. At all events, the expense will be a mere bagatelle compared to the boon which a supply of hay on the spot would be to sheep stocks in such a winter as that of 1880–81, when fodder got so scarce before the storm was over that it cost as much as £8 a ton and upwards, a price which many farmers could not afford, and in consequence sustained a loss of stock and capital which they have not yet redeemed. Supposing these hayfields only yielded an average of 100 stones, or 1 ton per acre, which is a low estimate, the advantages over buying at a distance, and carrying fodder up the mountains in deep snow, would be immense.

I must not overlook making a few passing remarks on the common bracken, which grows so profusely on the best parts of many of our hill grazings, that it does a great deal of harm. In many situations the driest and most shady heights and hollows are covered with immense beds of the plant, overshadowing grass, and, if not destroying it entirely, rendering the herbage so weak and innutritious as to be comparatively worthless. Ferns cover thousands of acres of Highland grazings for at least a third part of the year, and beyond affording occasional shelter, do no good whatever. On the contrary, their long woody roots and stems rob the soil, and must incur a great loss on every farm on which they prevail. Moreover, sheep attacked by fly frequently conceal themselves in thickets of ferns, and are generally seriously injured before they are discovered. Several means have been tried for extirpating the bracken, and I think the most effectual method is the scythe. If cut down regularly for a number of years in succession, just before the fronds are developed, and left on the ground, they will come up weaker and weaker every year, and so sparsely eventually as to do little or no harm, while the increase of grass which will follow the mowing of them would go far to recoup the expense.

Another means of improving hill sheep walks is heather burning. In former times, in the days of black cattle and goats, heather burning was deemed of little consequence. During that period the firing of a hill side would give landowners less concern than the burning of a few acres at the present time. The laird's only fear was the safety of his woods, and the tenant's the destruction of such patches of the heather as he had intended for thatch. It was a common practice then to set fire to high-lying moors in a favourable wind, and let them burn on for days and nights together. And yet such a thing as grouse disease was unknown; and although totally unprotected, fine healthy birds of all kinds and deer abounded. Mr. Horatio Ross speaks of disease having come under his notice at an earlier period, but it is not more than forty years since grouse moors in the north became seriously affected. I can remember the late Mr. Hugh Snowie of Inverness expatiating, in his peculiarly lucid and convincing style, on the first appearance of the epidemic in that county; at least it was a matter of astonishment to most people at that time. He had a diseased bird dissected before him, and pointed to the contents of the crop as being unusual, viz., a mass of dry, sapless shoots and flowers of the bell heather, &c. He had never seen anything like it before, and remarked the bird had come from rough ground; but whether the old heather on which it evidently had been feeding was the cause or the effect of the disease, he was not prepared to say. Be this as it may, I have seen at least one instance of the good result of an accidental, but very extensive, case of moor burning. It happened on an estate in Inverness-shire about thirty years ago, and burnt a tremendous extent of rough heather. The number of acres has escaped me; but in the course of a few years thereafter the "Lundy Beat" was regarded as the best on the whole estate for grouse. The soil being naturally moist and mossy, the heather grew quickly, and nowhere else could so large or so good a bag of fine healthy birds be made as on this ground. All this goes to prove that the interests of sportsmen and graziers as regards moor burning are identical. I have always thought so, and as one having no personal interest in the question one way or another, have no hesitation in saying that the system of burning one-eighth part of the moors every year in stripes, as now practised by a few proprietors, should be universally adopted. One of the great advantages of judicious burning is to draw sheep away from the meadows and shielings below, on which they are so apt to dwell in the early part of the season. Nothing interrupts and fags sheep more, when weak and emaciated in spring, than toiling through fields of old overgrown heather; and it is astonishing how much a series of long burnt stripes through these rough lands facilitates their movements up and down the mountains. Without such passages it is impossible to do justice to sheep stock. In some situations I have frequently seen the cotton grass, stool bent, and deer-hair of the higher levels, so necessary and beneficial at this season, almost entirely unconsumed for want of proper burning.

In summarising what I have been advocating in this essay, I would say—

1. That *draining* mountain pastures improves the temperature by dispelling the cold and hoar frosts which would otherwise occur from protracted evaporation. It also prevents liver

disease or rot, and braxy, affords a dry and healthy walk for stock, and increases the quantity and improves the quality of the herbage.

2. *Top-dressing* destroys noxious weeds and inferior grasses, promotes the growth of the finer, and supplies the phosphates necessary for milk and building up the frames of animals.

3. *Burning* enables the sheep to move up and down the mountains freely at all seasons, and to reach and crop the early grasses at the proper season; it also greatly improves the quality of the heather. The periodical gatherings are likewise thereby rendered less fatiguing and hurtful to stock.

4. *Fencing* prevents the flocks from wandering, insures repose, and facilitates handling and general management.

5. *Wintering* should be provided, and sheep more liberally fed at home, to enrich the grazings and save fatigue to hoggets, and the great expense of wintering in the lowlands.

I must now bring this paper to a close, and if any apology be needed must plead the importance of the subject as an excuse for extending my observations beyond the usual limits.

One thing certain is, whatever may be the result of the unequal competition in which the tacksmen of arable farms have been, and are still, engaged, there is little fear of the mountain grazings of Great Britain and Ireland maintaining their preeminence for raising sheep and cattle. The only thing proprietors and tenants need be apprehensive about is the depression in wool,—a depression which will probably continue, because the development of our colonies must necessarily keep ahead of the growth of the population and the foreign consumption of wool for years to come, and as a natural consequence the exportations of the commodity to this country will increase. But if, as most people think, foreign meat, however carefully preserved and carried to our shores, can never compare nor compete with the home-grown article, there is all the greater necessity for doing justice to our mountain pastures. And however imperfectly I may have touched upon the different ways of improving our grazings, that is, the methods which have already been, or ought to be, carried into practice, still enough has been said to show there is great room for further amelioration, and that landed proprietors could not expend money more legitimately, nor to better purpose, than in carrying out one or other, if not the whole, of the improvements I have endeavoured to recommend, wherever they are needed.

PLANTATIONS ON THE ESTATES OF BENMORE AND KILMUN, ARGYLLSHIRE.

By DONALD STALKER, Forester, Kilmun.

[*Premium—Minor Gold Medal.*]

BENMORE and Kilmun estates, of which James Duncan, Esq., is proprietor, are contiguously situated in the united parishes of Dunoon and Kilmun, in the Cowal district and southern border of Argyllshire, and for a considerable distance run along the Firth of Clyde.

The total area of Benmore and Kilmun estates is 12,260 acres, extending from the Firth of Clyde to the north end of Loch Eck, while on the south it possesses the advantage of having partially for its frontier the River Eachaig, whose source is in Loch Eck, and, after meandering through and fertilising an extensive plain, falls into Holy Loch, to which and Loch Long, an opposite inlet from the Clyde, the estate has a frontage of five miles.

About four miles in extent, running along the Holy Loch and Loch Long, has been feued and closely built upon with superior sea-coast summer residences; while immediately behind these there is a sloping belt of full-grown larch, oak, and birch trees, which impart ornament and afford shelter to the houses below. Behind this lies the arable and grazing land, which has a gradual ascent to the base of a wide curving range of hills, and terminating at an elevation of 1800 feet.

The northern boundary of the estate, extending along and rising abruptly above the western margin of Loch Eck for a distance of seven miles, is a continuous chain of hills, the highest being Benmore, about 2500 feet high, and anciently known as the Deer Forest of Argyll.

The soil consists chiefly of light sandy and gravelly loam, lying on slate rock, alternating with narrow veins of quartz,—the prevailing substratum throughout the entire estate. On the surface abundant evidence is given of the excellence of the green pasture, and but for the presence of brackens, which abound in many parts, suppressing the grass, the soil is otherwise admirably adapted for grass.

Benmore House is situated near the south end of Loch Eck, and head of the extensive, undulating, and fertile valley of Eachaig, the greater part of which until recently was in a wild state of nature, overgrown with brushwood, heather, and rushes. On it Mr. Duncan now grazes his celebrated West Highland cattle and blackfaced sheep, which acquired such celebrity at the Paris International Exhibition in 1878, and continue to carry off the first awards at the annual exhibitions of the Highland and Agricultural Society of Scotland.

In 1870, when the proprietor obtained possession of the estate, he resolved on effecting extensive improvements; but preparatory to commencing operations, arrangements of a most amicable nature were entered into with a few of the tenants to give up such portions of their hill pasture as Mr. Duncan considered should be planted.

With three of the largest grazing farms on the estate in his own hands, Mr. Duncan was enabled, both by tile-draining and ploughing, to bring under cultivation all waste lands adapted for that purpose; while on moorish wastes and portions unreclaimable he planted. And in testimony of the extreme suitability of both soil and climate for growing wood, the following statements may be narrated. About sixty-five years ago, on the base of the hill immediately behind Benmore House, where previously only a surface herbage of coarse grass, brackens, and heather existed, 55 acres or thereby were planted with larch, Scotch fir, Norway spruce, and several species of hardwood, chiefly with the view of contributing to the amenity and shelter of the house,—the present average value of which per acre is £70, and, since planted, it has yielded an annual rent of over 25s. an acre.

Thinnings have from time to time been cut during the last ten years for estate purposes, the money value of which would not be less than £500; and although it is impossible now to ascertain the actual value of the thinnings antecedent to 1870, it may reasonably be assumed they would have been sufficient to defray the outlay of capital on formation. The trees are with few exceptions healthy, and where the soil and subsoil are of a sandy, gravelly, and porous nature, still growing vigorously; but in some parts at the top of the enclosure, where the surface soil is mossy, retentive, and resting on rock, the larch trees are very diminutive, having scarcely made any growth for years, and some are disfigured with wounds known as "larch blister," and gradually decaying, giving evidence to the fact that the planting of larch trees on exposed rocky ridges, meagrely covered with inferior soil (indeed, in all adverse soils and situations), is the chief cause of the many diseases to which that very valuable tree is subject. The ground on which these trees now stand was, before being planted, almost valueless for grazing purposes, but so transformed has it now become as to be yearly worth 10s. an acre, and on it are grazed nearly all the year round a number of young Highland cattle; thus showing the profit and advantage of planting ground otherwise lying waste, over and above what was necessary for ornament and shelter.

With such conclusive proof of the advantages to be gained from planting such portions of the estate as under heather and brackens were of no value whatever, and considering that many of the best trees forming the plantation already referred to might at any time be uprooted by violent winds, and the amenity of the house suffer thereby, arrangements were made by Mr. Duncan for planting extensively such steep and rocky portions of his estates as could not be reclaimed and brought under cultivation.

Since 1871 thirty-one separate enclosures have been planted, the extent of which amounts to about 1622 acres, and the number of trees to 6,488,000. The following indicates the divisions and acreage of each and time of planting:—

Divisions.	Acreage.	Time of Planting.
Uig Hill,	205	Autumn 1871, Spring 1872
Benmore Hill,	42	” ”
Glen Massen Arbour,	12	” ”
Home Farm Clumps (7),	14	” ”
Finnartmore,	320	Autumn 1872, Spring 1873
Strone Belt,	8	” ”
Rashfield Hill,	170	Autumn 1873, Spring 1874
Craigend Clumps (2),	3	” ”
Massenside, Auchnaclauch,	8	” ”
Auchnaclauch Hill,	45	” ”
Finnartbeg,	280	Autumn 1875, Spring 1876
Garletter Hill,	283	Autumn 1876, Spring 1877
Burnside, Garletter,	10	” ”
Hillside Belt, Garletter,	62	” ”
Blairmore Clump,	36	” ”
Claudy House Belts (4),	5	” ”
Kilmun Mansion Avenue,	2	” ”
Rashfield Belt,	8	” ”
Strone Clump,	2	Spring 1879
Benmore Quarries,	100	Autumn 1878, Spring 1879
Flagpole Avenue, Strone,	7	Spring 1881
Total,	1622 acres, or thereby.	

As there has been a succession of foresters on the estate since planting operations were first commenced in 1871, neither the number of plants nor their value can be exactly ascertained, and the difficulty of forming a correct estimate is further increased by the fact that large numbers of plants were transplanted from "Benmore home nurseries" from time to time without any correct account having been kept, but the following is a near approximation to the species, age, and cost of plants, as also the amount of capital expended on the formation of the plantations including fencing, draining, planting, &c.:—

Larch, . . .	2,850,000	1 and 2 years seedling, 1 and 2 years transplanted.
Scotch fir, . .	2,130,000	2 years seedlings, 1 and 2 years transplanted.
Spruce, . . .	1,350,000	2 years seedling, 2 years transplanted, and twice transplanted.
Ornamental conifers,	128,000	2 years seedling, twice and thrice transplanted.
Hardwood (varieties),	30,000	2 to 3 feet high.
Total, .	6,488,000	

Cost as follows:—

Plants and shrubs, . . .	£4,136	2	0	Average per acre,	£2	11	0
Frieght and cartage, . .	486	12	0	,, ,,	0	6	0
Planters' wages, . . .	1,703	2	0	,, ,,	1	1	0
Draining, ...	1,216	10	0	,, ,,	0	15	0
Fencing 26 miles 1709 yards,	3,000	14	0	,, ,,	1	17	0
Planting vacancies, additional drains, ...	892	2	0	,, ,,	0	11	0
Cutting grass, brackens, &c., from plants, . . .	729	18	0	,, ,,	0	9	0
	£12,165	0	0	Average of	£7	10	0

The expense of these plantations is unusually high, several circumstances combining to make it so, and were it not for unduly extending this report, each might be cited in detail. Three of the chief causes, however, which contribute in swelling the amount of expenditure are accounted for in this way: Public and private roads intersecting many of the enclosures, have on each side been fenced with "patent continuous wrought-iron bar fencing," while most of the belts and clumps planted, chiefly for shelter and ornament, on the home-farm fields are protected by the same material; and also the extra expense entailed in fencing so many enclosures, instead of having the same acreage within one ring fence. Again, the ground in several parts was covered with a rank surface vegetation of brackens, grass, &c., so hostile to the growth of young plants, that strong large-sized plants had to be used; while on exposed, wet, and retentive portions close planting and extensive drainage had to be resorted to.

A description of the soils, species of plants, altitudes, and fencing, mode of draining and planting, will now be given. Uig and Rashfield plantations are situated to the east of the river valley of Eachaig, opposite Benmore House, with a north-western exposure, and at an average height of about 450 feet. The ground is steep, undulating, and rocky. The surface soil, consisting of sandy peat, is on the ridges and tops of precipitous rocks coated with heather, while the intervening hollows are of an open, sandy, and gravelly nature, and covered with brackens and grass.

The substratum consists of clay-slate and quartz rock alternating, and prevailing throughout the entire estate, with but a few narrow seams of whinstone. Turning attention again to Uig and Rashfield plantations, on the ridges of which native Highland Scotch pine, *Pinus Laricio*, *P. austriaca*, and *P. montana*, with a mixture of mountain ash, have been planted, and into hollows, or wherever the adaptation of the soil was favourable, larch was planted, interspersed at distances of from 15 to 30 feet apart, with several varieties of coniferous and deciduous trees, including *Pinus insignis*, *P. excelsa*, *P. austriaca*, *P. Laricio*, and *P. Strobus*, *Picea Nordmanniana*, *P. pectinata* (common silver fir), *P. balsamea*, and *P. nobilis*, *Abies Douglasii* and *A. Menziesii*, *Cedrus Deodara*, Purple beech, and scarlet oaks. While higher up the hill, Norway spruce and Scotch firs, were mixed with the larches, and in places where brackens and grass fought for mastery, black Italian poplars and sycamores.

The Dunoon and Kilmun public road to Inveraray, *via* Loch Eck, partly intersects, and for a distance of two miles skirts the base of these plantations. Along the road, on both sides, are grouped together ornamental conifers, including *Wellingtonia gigantea*, *Araucaria imbricata*, *Cedrus Deodara*, *C. atlantica*, *Picea Nordmanniana*, *P. nobilis*, *P. pectinata*, *P. lasiocarpa*, *P. Pinsapo*, *Abies Douglasii*, *A. Menziesii*, *A. Albertiana*, *A. Englemanii*, *A. nigra*, *A. alba*, and *A. Smithiana*, *Pinus Laricio*, *P. Benthamiana*, *P. excelsa*, *P. austriaca*, and *P. cembra*, *Thuja Lobbii*, *Thujopsis borealis*, *Cryptomeria japonica* (the Japan cedar), *C. elegans* (the elegant cryptomeria), and *Cupressus Lawsoniana*, the number of plants in each group varying from five to a hundred, according to the extent of the various nooks and recesses between the rocks, which are crowned with native highland Scotch and other hardy pines. Larch, Scotch fir, and Norway spruce have been planted in all the groups, to shelter the tender plants.

These trees have also been planted into groups by themselves on marginal parts of the plantations, partly for ornament and also to test their adaptation for becoming profitable timber trees in this country, and for the latter purpose they have been placed well back off the boundary fences, and at intervals of about 12 feet apart. The borders of the plantations near to public and private roads are, immediately behind the fencing, lined with deciduous trees, evergreen and flowering shrubs, comprising purple beech, walnuts, purple and variegated planes, scarlet oak, common hawthorns, single and double flowering scarlet hawthorns, common and golden laburnums, lilacs, bay and Portugal laurels, common and variegated hollies, *Rhododendron ponticum*, *Mahonia aquifolium*, cotoneasters, and other ornamental trees and shrubs.

Great care has been bestowed on these plantations. Additional drains have been made, and all blanks planted up; and what was some nine years ago the most bleak and uninteresting hillside is, now that the young trees are developing with vigour and uniformity, most imposing and picturesque. Another improvement has been effected on this part of the estate, and one which contributes in no small measure to its attractions. A bridle path, five feet wide and nearly two miles in length, has been lately constructed, at a cost of 2s. per lineal yard, including rustic wooden bridges which span the burns. The path diverges from the public road opposite "Loch Eck porter's lodge," and curves up through the plantation and across the face of precipitous rocks with an easy gradient, till it reaches the south side of it, at an altitude of 600 feet. At this point it connects itself with a road one mile in length, and quite recently formed along the course of Uig burn.

Entering the glen at the top of Uig and Rashfield plantations, we follow the course of the burn which divides these, and although our eyes can no longer feast on distant scenery, fresh beauties and grandeur are here disclosed to view. Between huge overhanging rocks, in the crevices and sides of which are an endless variety of ferns, mosses, and other Alpine plants, the burn flows rapidly down in a series of waterfalls; and the road which leads into the nurseries is shaded over its entire length with oak, elm, alder, birch, mountain ash, and hazelwood. *Wellingtonia gigantea*, *Picea Nordmanniana*, and many other ornamental conifers, have been planted into recesses in the rocks in this glen, which for wildness and grandeur is by few equalled, and certainly by none excelled in the west coast of Argyllshire.

In the home-farm fields the trees planted in clumps are making rapid progress. The soil is various, consisting of hard gravel, other parts of sand, and along the margins of the river and throughout the largest portion of the farm the soil is moss, mixed with a fair proportion of sand.

As already stated, the fields in Eachaig valley have but very recently been reclaimed, and a most interesting illustration of the good effects of cultivation is here shown in the contrast between the luxuriant crops of corn, ryegrass, and turnips, which surround the clumps; while round the young trees, which stand from 6 to 10 feet high, there is a covering of rank heather nearly 2 feet in height.

Finnartmore and Finnartbeg plantations are contiguously situated on an eminence confronting the Holy Loch and Firth of Clyde at an average height of 550 feet. The ground is steep, yet comparatively regular and smooth on the surface. The soil, which is covered with grass, brackens, and heather, seems admirably adapted for the growth of timber, being a rich gravelly loam resting on a subsoil of gravel and rocky débris, and being naturally dry, comparatively few drains were required.

From the base upwards, two-thirds of the grounds have been planted chiefly with larch; while the higher slopes and summits are planted with native highland Scotch pine.

Evergreen and ornamental conifers, including 8000 *Picea Nordmanniana*, and clusters of mostly all the hardier species of the silver fir, pine, spruce, cypress, and cedar, have been interspersed among the larch, at distances varying from 15 to 30 feet apart, so as to give some verdure during the winter months, and also to have a variety of profitable timber trees growing on the ground after the larch trees are removed. Norway spruce has been planted almost exclusively on patches growing a strong vegetation of grass, brackens, and rushes; while on rocky parts, thinly covered with mossy soil, native highland Scotch pine was planted. As in the case of Uig and Rashfield, these plantations have been carefully gone over a second time, and attention bestowed on wet and blank spots. The trees are all healthy, and making rapid progress. The larch, *Abies Douglasii*, *A. Albertiana*, *Thuja Lobbii*, *Pinus Laricio* and *P. insignis*, which grow apace in congenial soils and favourable situations, have now reached a height of from 10 to 12 feet. The other pine trees, although not so high, are growing rapidly, and appear in perfect health. Previous to being planted, the ground presented a bleak, sterile, and uninteresting appearance, but now that it is almost clothed from base to summit (highest elevation about 1200 feet) with young trees, it is a pleasing object in the landscape along the Holy Loch and Firth of Clyde.

Garletter plantations are so named by reason of their being in the glen of same name. The exposure is easterly, at an average height of nearly 600 feet. The largest division is situated on the eastern extremity of Kilmun estate. The surface soil consists of decomposed sandy peat, resting in turns on rock and yellowish gravel, and mostly covered with grass. From the wet and retentive nature of the ground, close and extensive draining had to be resorted to, yet it withholds the needful sustenance from the young trees, especially on high and exposed parts. After a time, however, when the plants attain such dimensions as to cover the ground, and thereby suppress the strong grassy vegetation, they may be expected to grow as well as trees in the more favourably situated plantations. In kindly soils, which contain a larger proportion of gravel and sand, and consequently are drier, the larch, Norway spruce, and Scotch firs are growing satisfactorily.

Auchnaclauch plantations in Glen Massen have a north-western exposure, and an average height of 250 feet, and in respect to both ground and plants they are very much similar to Uig and Rashfield.

Glen Massen arbour plantation is within the Benmore policies, with a north-western exposure, and an average height of 150 feet. The trees are very thriving, and making rapid progress, particularly the larch, *Abies Douglasii*, *Picea Nordmanniana*, and Scotch firs.

Benmore hill and Benmore quarries plantations are situated side by side on the hill immediately behind Benmore House, with a south-eastern exposure, and an average height of 450 feet. The ground and general state of these plantations is very much similar to Uig, but differs in this respect, that Benmore quarries plantation is not so far advanced, having only been in existence for three years, and also that it contains more *Abies Douglasii* than the others. Forty thousand of these were planted as an experiment, and in congenial soils and sheltered situations have made magnificent progress; but on exposed sites they have, with few exceptions, been deprived of their tender tops by the frosty winds.

Craigend, Strone, and Blairmore belts and clumps were primarily designed for shelter and embellishment, and were placed at judicious intervals on the grazing fields, in close proximity to the summer residences along the sea-shore. All the trees give evidence of health by their rapid growth.

Fencing.—Uig and Rashfield plantations are, on each side of the public road, protected by "continuous wrought iron flat bar fencing," which cost from 2s. 9d. to 3s. 6d. per lineal yard, according to the state of the iron market at the time the fences were erected. Uig plantation, on the northern extremity of Kilmun estate, has a march fence constructed solely of iron, 3½ feet above ground, with seven wires (of No. 5 and No. 6 best bright wire) laced between the standards, with No. 8 wire fastened to top and bottom wires; wrought iron standards, 1¼ inches broad by ⅜ inch thick, batted into stones placed 7 feet apart, with iron side-stays ⅝ inch square at every fifth standard in curving parts of the fence; one wrought iron straining pillar, 1½ inches square at 100 yards or thereby, which make it a most substantial fence, scarcely ever out of repair, and therefore most suitable for the boundary of an estate. The cost was 1s. 6d. per yard. On the upper and side boundaries there is a six-wire fence (of No. 4 and No. 5 best bright wire) stapled to larch posts 5½ feet long, pointed and driven into the ground at 5 feet apart, with a larch stay at every alternate post. This fence, which cost 9d.

per yard, is a most servicable one, and by the time many of the posts require replacing, thinnings from the plantation will be of a sufficient size for the purpose.

Rashfield, on the upper and side boundaries, is enclosed with a six-wire fence (of No. 5 and No. 6 best bright wire) 3 feet 4 inches high; iron standards, 1¼ inches broad by ¼ inch thick, batted into stones placed 6 feet apart; iron straining pillars 1½ inches square. The cost per yard was 1s. 5d., and it is a most durable and sufficient fence.

Finnartmore and Finnartbeg are in part protected by a wire fence 3 feet 4 inches high, and by a rough stone dike 4 feet high, on the top of which is a double line of wooden rails nailed to larch posts, and reclining against the dike on the inside. The fence is a six-wire one (of No. 4 and No. 5 best bright wire), with iron straining posts on the summit, and larch ones along the base and west side of the enclosures. The cost was about 8½d. per yard.

Benmore hill and Quarries plantations are surrounded by a common six-wire fence, larch posts and straining posts, and in part by the Corriemony fence. Auchnaclauch plantations have been enclosed with iron and wire fencing, similar in every respect to that of Rashfield.

Garletter plantations are enclosed with "Corriemony fencing," 3 feet 3 inches high above ground, with angle iron standards batted into stones at 22 yards apart, with six steel wires of Nos. 8 and 9, stapled to larch droppers at 6 feet apart; iron straining pillars at intervals of 200 yards, with an iron stay to every standard. The cost was 7d. per yard, but soon proved itself unable to withstand the wintry storms, which levelled considerable portions of it on the most exposed sites; and, although intermediate standards were at once put in, placing them at 11 yards apart, yet it is still insufficient and constantly requiring repair, which, owing to the brittleness of the material, is difficult to do. All these fences, in the present state of the iron market, could now be constructed cheaper.

Draining.—The ground was drained by contract, and also by men employed at a fixed rate of wages per day. The method adopted in draining the steep and rocky enclosures was, by having all the wet ground drained by "surface drainers," who, with "big spades" and other tools adapted for that purpose, performed the work far more expeditiously and at less than a fourth of the price than could possibly be the case by using the ordinary spades or shovels. The drains were made from 2 feet to 2 feet 3 inches wide at top, 18 inches deep, and 6 to 8 inches broad at bottom, in places where the soil admitted that depth. The cost of making was from 1s. 9d. to 2s. 6d. per 100 yards, according to the soil. All parts which required deepening were subsequently gone over a second time by day labourers, and sunk with pick and shovel a sufficient depth into the subsoil.

In deep loamy and mossy soils open drains were formed by contract, and also by day labourers. The dimensions of the drains were from 2½ to 3 feet broad at top, 2 to 2 feet 9 inches deep, and 6 to 9 inches broad at bottom, according to the soil. The cost was from 9s. to 12s. 6d. per 100 yards. All the soil taken out in forming the drains was spread over the surface of the ground.

Planting.—Planting operations were performed under the constant supervision of the forester and an assistant.

The plan devised for transporting the plants to their new habitation was carried out in the following way. But first of all, and in nursery phraseology, the plants were properly "shouched" into dry ground at the base of and within the enclosures. Four Shetland ponies, on whose backs pack-saddles were strapped, and into which the bundles of plants were placed (roots inward), proceeded on their march up the hill in pairs, each being tied to the other's tail, and under the charge of a man and boy. On reaching their destination, the plants were again "shouched" close to where the planters were at work. Pits were formed for deciduous broad-leaved plants, and also for ornamental and expensive pines, which were interspersed amongst the others in suitable soils at moderate altitudes, and at distances varying from 12 to 30 feet apart.

The usual number of men in one squad, notching the plants into the ground with common garden spades, was about a dozen, and two lads were fully employed in keeping up the supply of plants to the hands of the boys and girls, each of whom inserted them into the slits or notches made by every two men. The plants were placed at from 3 to 3½ feet apart, or an average of 4000 to the acre.

The situations and boundaries of the plantations were carefully laid off, with the view of providing shelter for the flocks on the adjoining grazings, and to promote this object the fencings were carried along in curving lines, thereby forming a series of spacious recesses, into which the flocks might congregate in snowstorms and inclement weather during the lambing season.

There are upon the estate about 100 acres of what may be called fully grown larch and pine timber, and upwards of 300 acres under old hardwood and deciduous trees; and Mr. Duncan has from time to time expended large sums in improving the latter. The brushwood, smaller-sized and inferior coppice wood trees are being gradually thinned out, the woods drained, and replanted with conifers, rhododendrons, and other underwood shrubs. Woodlands, to the extent of about 50 acres, have already undergone this improvement, and for this purpose, and the planting of other portions of the estate, there are growing in Benmore home-nurseries the following conifer and ornamental trees :—

Picea Nordmanniana,	36,000
„ nobilis,	11,000
„ cephalonica,	2,000
„ Pichta,	6,000
„ Pinsapo,	600
Pinus Laricio,	40,000
„ austriaca,	15,000
„ insignis,	12,000
„ excelsa,	3,000
„ cembra,	600
Abies Douglasii,	33,000
„ Menziesii,	20,000
„ orientalis,	4,000
„ canadensis,	3,000
Wellingtonia gigantea,	6,500
Araucaria imbricata,	3,160
Cypressus Lawsoniana,	6,000
Thuja Lobbii,	1,000
Cedrus Deodara,	1,000
„ atlantica,	500
Other choice pines (varieties),	2,000
	206,360

The nursery also contains a collection of hardwood plants, besides an extensive stock of true native Highland Scotch fir.

The situation of Benmore House is a most desirable one. The gardens, greenhouses, and fernery are of themselves sufficient to attract the admiration of visitors to the locality. But another and still greater treat has been provided for them. It consists of a picture gallery erected in 1879–80, and is situated in close proximity to the house. In length it is 150 feet, by 60 feet broad, and 40 feet high. The walls are adorned with most interesting and valuable works of art, many of them being extra large-sized paintings by some of the most eminent ancient and modern masters; while the centre of the gallery is filled with statuary, embowered with crotons, palms, ferns, and other graceful foliage plants.

That the public evince a due appreciation of this splendid acquisition to Benmore House is evident from the fact that hundreds of people are availing themselves of the liberty at all times granted of inspecting the gallery.

The policies are extensive and exceedingly interesting, being intersected by two rapidly flowing rivers, Eachaig and Massen, in both of which salmon abound. About four acres of ground, stretching along the sides of Loch Eck Avenue and Echaig riverside, have been formed into a pinetum, and three acres along the banks of the Massen are being gradually converted into an arboretum by the introduction of duplicate and single specimens of all the hardy trees known in Britain.

Mr. Duncan has also planted within the last six years about 30 acres of ground, principally moorland, in numerous belts and clumps, on his Bailliemore estate in Strachur, Loch Fyneside, chiefly for sheltering newly reclaimed and improved parks.

The benefits resulting from having plantations of serviceable timber interspersed at intervals over an extensive mountainous property such as Benmore are manifold. Moorlands the most sterile and uninteresting, when planted, rapidly become a source of great beauty, attraction, and wealth.

From no reason beyond what was a prevailing custom, the majority of Highland proprietors have contented themselves hitherto with planting only for sheltering and embellishing their mansions and grounds, and it is surprising how many of them are still satisfied with a comparatively small wood behind their dwellings, frequently not exceeding 50 acres, while they might by forming plantations in their dreary glens and barren hillsides make several portions of their estates as attractive and, certainly far more remunerative, than the grounds immediately surrounding their mansions. When trees become matured in a glen or other secluded part of a property, they may be cut down without in any way detracting from the general aspect of the estate. Several extensive landed proprietors at the present time being well aware of the advantages to be derived from the planting of moorlands, have placed large tracts of their properties under forest trees, and none of them will ever have occasion to regret this, as it increases their revenues and greatly improves the soil for pasturing purposes, as well as the climate.

MARINE HIGHLAND INDUSTRIES.

By William Anderson Smith, Ledaig, Argyllshire.

[*Premium—The Medium Gold Medal.*]

In face of the Edinburgh Fisheries Exhibition, originated by the Highland and Agricultural Society, and so successfully conducted under its auspices, it would be out of place to devote much space to the question of the fisheries; but, as the subject is engaging the particular attention of a Special Committee of that Society, I desire to place before the public the necessities of the Highlands in this connection, and the various directions in which enterprise might be stimulated and encouraged.

It so happens that it has been necessary hitherto to bring extraneous aid both in skill and money to develop all marine industries along the Highland coast-line, as the only important centres of such industries have been created from without, the natives, with some few but important exceptions, neither showing skill as boatmen and fishermen, nor love of seafaring. Yet the enormous extent of coast-line, the many safe anchorages and harbours, the mildness of the western sea, and the facilities in railway and steamboat communication fast being multiplied, ought to direct especial attention to the undeveloped resources in these waters, that might well relieve many over-populated districts from the pressure that is upon them.

The poverty of the more isolated districts, preventing the men obtaining the needful boats and gear, is gradually lessening through a wider diffusion of wealth; and what is greatly required is a wider diffusion of knowledge and skill, to enable the scattered population to make use of the resources often at their door.

Of recent years much progress has been made in the western herring fishery, various new stations having been established of an important character; while the whole west coast has been tapped by steamers in the herring season to an extent never hitherto attempted. This has done more, however, to bring boats from the east than to develop the west coast fishery as a local industry, and not until the coast population are stimulated to attempt the capture of the ordinary white fish off the shore, and so gradually accustomed to seafaring and the careful handling of craft, will they acquire skill sufficient to enable them successfully to follow the bolder branches of the profession well out to the deeper banks.

The use of the long line or bulter, as employed in the cod and ling fishery, is mostly confined to special centres where this fishery is conducted, but has not extended to the outlying districts where fish are to be had in at least sufficient quantity to supply the locality, while occasionally considerable supplies could be forwarded to the more populous districts. The consequence of this want of gear and skill is that we are exceedingly ignorant as to the marine resources of the west, neither knowing properly what species of fish are common, nor where they are obtainable; while, wherever the herring fishery is in full swing, all other fish are neglected, as they show but a poor return for the labour expended compared with this prolific fish.

As examples of what fisheries are worthy of attention, I may instance mullet, which are plentiful in certain localities, but through ignorance of the proper mode of capture, and perhaps want of the proper appliances, I never see one for sale, and rarely hear of a capture.

I have seen the sand smelt (*Atherina*) in quantities, but the people were equally ignorant of their character, and in want of the required nets to enclose them.

The conger eel, which is a good and wholesome, and at any rate a marketable fish, is only sought as bait for the cod and ling boats, while they might form an important winter fishery if regularly sent to the southern markets.

Whiting are more especially plentiful in some seasons in our sea-lochs, where these are largely supplied with fresh water; but their capture is only intermittent, partial, and for local consumpt. The people have not learned that they are valuable as a marketable commodity, and that it is worth expending care and assiduity in their capture. But perhaps the most remarkable instance of disregard of a valuable industry is that of the fresh-water eel, which can only be termed "marine" from its frequenting the sea to spawn. Neither eating what is to them an unclean and disgusting object, nor capturing it for sale, it is allowed to swarm on all our coasts, occasionally to the serious injury of the fry of the Salmonidæ; and its neglect represents a loss to the country which may well be calculated at a very large sum, seeing that the eel fishery of Ireland is scarcely, if at all, inferior in value to her salmon fishery. It is hardly conceivable, but throughout the Highlands you will scarcely ever see an eel trap, nor, indeed, can they be purchased in the west, to our knowledge; the only specimen exhibited in Edinburgh being wholly unsuited for the purpose designed. What is wanted is the distribution of a few properly made osier traps, so that the scattered population may understand their construction, and the value of the creature they are designed to capture, in the market. This ignorance of apparatus is so widespread that we look to the new Committee of the Society to use their influence in obtaining proper exhibits of the best appliances for fish capture, to be loaned throughout the Highlands to the different coast districts as a means of education, to supplement the annual shows of the Society, now thrown open so liberally to all connected with the fisheries.

There is scarcely a stream with a coast exit but is well filled with an eel population, and as the elder members freely prey upon their weaker brethren, the annual removal of a large proportion of the more marketable eels would only improve the streams as eel preserves.

These same streams can for the most part readily be made available for sea trout, by merely breeding and turning loose a moderate number annually, which will return thither in the breeding season; and even when the stream is so small as to offer scarcely any facility for the passage of sea-trout, a very little expenditure would form a pool or pools a short way from the mouth of the stream, where good sport and an important aggregate food-supply could be obtained. Large fish will make strenuous endeavours to pass up the very smallest water-courses, or wait patiently for a spate to enable them to do so; while it is rare that they would require to wait long in the rainy west.

The coasts of the Western Highlands and Islands are well supplied with sandy and muddy stretches of foreshore, where the various flat fish abound; and yet, partly through ignorance of their value, partly through dislike of all flat fish, the inhabitants rarely capture any of them, and never send them to market.

I will not at present touch upon the advantage of breeding artificially the finer qualities of these fish, so as to supersede the plaice on these feeding grounds; although this is quite a feasible, and in our opinion not a difficult operation. But we merely call attention to these sources of supply as at least of local value. The Broad Bay flounder of Stornoway, and celebrated flounder of Iona, are noted instances of superior fish.

A fresh hake is a fish that is looked upon by many as an especially delightful dish, and yet this fish is never seen in the market, although comparatively plentiful on many parts of our western coast.

I am not aware that the tusk or torsk is ever captured south of Ardnamurchan, but it is one of the finest of the Gardidæ when fresh, in our opinion; and I am persuaded that if the fishermen of the north were once to have it properly introduced into the market, this firm, nourishing, and agreeable fish would soon become a public favourite. Along the Hebridean coast-line the turbot was usually classed among "flounders" in our experience, and we have frequently purchased fish at 1s. each that would have been worth 30s. in the London market. A very great number of these fishes are cut up for bait in the cod and ling fishery, and a little arrangement might readily bring them before a more appreciative set of customers. The same may be said of the halibut, a fish only of recent introduction to our markets in the west of Scotland, and one that ought to be procurable in far greater abundance than at present, as it is by no means an uncommon fish on the western banks. Foremost among fishes that are wholly neglected along the western seaboard, I would place the skate, especially the thornback skate, which is rarely captured except when it ought to be let alone, namely, when it comes into shoal water to deposit its eggs. These fish are very numerous among the muddy lochs of the Highlands, and living for the most part upon crustacea, and frequenting comparatively shallow water, they ought to be readily captured, and constitute an industry of some value. They are readily kept alive, and easily fed upon crabs, and could thus be kept until wanted, when they might be crimped and promptly despatched to the nearest market. By protecting them in May and June, when they come shoreward to lay their eggs, the stock could easily be kept up, and their capture of a moderate size can be readily effected with small lines baited with hermit crabs or whilks.

There is yet another class of fishes quite ignored among us. We refer to the species of sandlaunce (*Ammodytes*), those delicious fish, which in many quarters are so highly prized, and are only inferior in delicacy to the smelt. They are very numerous in our extensive western sands, and ought to be assiduously sought after, either for local consumption, or, where practicable, for prompt despatch to a ready market. The whole West Highlands of Scotland being comparatively virgin ground, without the danger of interfering with vested interests of an irremovable character, such as meet the fish-culturist on the English rivers and coasts, no better time than the present could present itself for the wise and judicious supervision of the coast in connection with its marine industries.

The great success of lobster ponds made out of any suitable small arm of the sea, into which lobsters may be placed in the summer time, and kept until the winter season, ought to stimulate efforts to improve upon this by both breeding and feeding them in such "lobsteries." The West Highlands lend themselves admirably to efforts in this direction, and I cannot understand how it has never paid any one to despatch the fine crabs of the north and west to the southern markets. As a rule, consignments of these have never been successful, and I am strongly inclined to question whether such consignments have had fair play in the open market. The supply is unquestionable, and the quality superior, without being overgrown, and I could wish that a *bona fide* experiment were made on a proper scale with this commodity.

The idea of enclosed rocky ponds might be greatly extended in the west and north, where such baylets frequently open direct from the outer ocean. At Arcachon there are ponds into which sea fish enter freely as fry, and where they are then secured by closing the entrances except to the inflow and outflow of water. The fish are kept there until they attain a marketable size. This principle could easily be carried out in many districts at small cost, and the coast, indeed, ought to be lined with similar feeding-places, whence the fish could be taken during severe weather, and despatched to good markets.

It is scarcely credible the quantity of cockles that can be obtained from certain portions of our coast, of a quality so superior as to be little inferior to oysters. And yet we never heard of any being despatched to market from the Highlands, although they form such an extensive industry on the English coast, where this shell-fish is distinctly inferior in flavour to the northern mollusc. There is surely room here for encouraging a traffic among our poor island populations.

The periwinkle (*Littorea littorina*), again, is exported in large quantities under the name of "whilk," and yet the real whilk is never gathered, either for local consumption or export; whereas there is not only a good demand for these mollusca as food in the cities, but a still better demand for them as bait in the line fisheries. We should prefer to see our own line fisheries so developed as to demand all that the localities could supply, but in the absence of this a distinct industry could be created out of these carnivorous shell-fish themselves; and this might lead more readily to the further development of the capture of those various fishes that these mollusca are employed to allure. From the quantity of whilk spawn thrown, its accessibility, and the readiness with which it lends itself to culture, we are strongly of opinion that an opening for an industry may be found in their artificial propagation in certain localities. The so-called "whilk," or periwinkle, trade is already a large one in the Highlands, and we believe would be locally improved by the more regular cutting of the sea-ware. This is commonly allocated to particular farmers *ex adverso* the coast, and we consider that so long as they claim such allocation they should be obliged to perform their part of the contract, and cut the whole portion allocated every third year. This would supply the winkles with fresher pasture, and enable the same coast-line to carry a larger stock. The great stretches of uncut ware in many districts represent a double loss to the locality in manure and periwinkles. I will not enlarge upon the vast importance of the mussel harvest, that only requires gathering in many places, and would amply repay attention in others.

Those splendid shell-fish, the myae, tapes, and solens, are all worthy of note, and ought at least to prove an aid to the local populations, many of whom will not at present condescend to touch them. Is there no way of teaching their practical value, and stimulating the coast population to test their nourishing and palatable qualities? Many of these very shell-fish that are despised at our own doors are imported tinned from the American seaboard! How much more agreeable and nourishing they are fresh, and how readily they will bear carriage to market, ought surely to be more widely known.

Over a great portion of the west coast, at a few fathoms depth, a good supply of scallops, or *Pectens*, is procurable, and these are among the most delicate shell-fish that our waters can supply, more especially the species *P. opercularis*. On the east coast they are mostly dredged for bait, but if it were generally known how superior they were when fresh from the water, they would be assiduously sought after as a table delicacy. Unfortunately they cannot retain a supply of water, and consequently will not carry far or keep; but they could be placed in ponds when captured, and sent off by train when desired.

Apart from the food supply, there are other industries that would well repay encouragement and industrious pursuit.

Although carrageen, or Irish moss, is not so much in fashion as it once was, or as it deserves to be, for puddings, it is still of value commercially, and would yield a fair return if despatched to cotton manufacturing districts for the making of size. This fine purple alga grows freely along our coasts, and can be gathered in quantity at very little cost of labour.

Another article that could readily be garnered in large quantities, and would always find a ready market, is *Zostera marina* or sea-wrack. This grass grows just beyond ordinary low water, but can easily be cultivated along muddy coasts, where it not only improves the ground for the culture of oysters, but renders it firm and more traversible. Considering the excitement over it as a possible source of fibre during the cotton famine, we are surprised that attention has so soon been removed from its unquestionable claims. As stuffing for cushions, and for upholstery generally, it is even now largely used; the bulk, we believe, coming from Holland.

The utilisation of other marine products ought also to attract enterprise. The skin of the rough hound (*Squale rousette*) is no longer in great demand for shagreen, yet we see no reason why it should not be largely used in other manufactures in which ingenuity and skill are employed. I see no reason why it should not form a basis for such manufacture as much as the skin of the alligator, which of late years has fetched such large prices and come so much into favour; not so much from its intrinsic value, as from the taste and elegance of the articles manufactured from it.

The same may be said for shell ornaments. Our shells are quite fit to compete in this direction with those of most other countries, but what is wanted is good taste and artistic knowledge. We must confess, that at present our shell ornaments are not such as to induce purchasers of taste to invest.

When we think of our enormous Highland coast-line, and the hundreds of thousands of acres of utilisable foreshores, we cannot but conclude that there is great remissness somewhere, when our marine industries of all kinds are so backward in the Highlands. The population may not be naturally a seafaring race, but they are capable of being stimulated to any class of industry when once they are shown the way; and I have endeavoured to trace out a few directions in which they may be successful in utilising—at small cost to start with—some of the really vast resources of our Highland lochs and outer waters.

I have already had occasion to refer to the necessity for a clearer understanding as to the foreshore ownership, so that the public interested might more readily know how to obtain legal sanction for attempts at foreshore cultivation of whatever kind. The prevailing uncertainty is a great stumbling-block to any such efforts. When it is not otherwise distinctly acknowledged, the proposed marine cultivator, however, may conclude that the ordinary Highland proprietor claims the control of the shores *ex adverso* his estate, and acts accordingly. A difficulty is seldom raised, except on important occasions; but the successful creation of a new industry is just such an occasion as would raise questions that ought previously to have been settled!

Would it be too much to ask those Highland proprietors connected with the Highland Society, who have a right to their *ex adverso* foreshores, and are willing to encourage all *bona fide* efforts at marine cultivation, to register their names and coast-line in the *Transactions* of the Society, as the first important step towards a proper understanding?

THE RELATIVE VALUES OF STORED AND UNSTORED TURNIPS IN THE FEEDING OF SHEEP.

By John Caverhill, Greenburn, Reston.

[*Premium—The Minor Gold Medal.*]

Wishing to ascertain the comparative value, as estimated by chemical analysis, of turnips that had been early stored and turnips that stood out in the field all winter, in the beginning of February 1881, I entered into communication with Dr. Aitken, chemist to the Highland Society, upon the subject. In reply, he suggested that it would be both interesting and instructive to have the same also tested by actual feeding, and kindly gave me some idea as to how I should proceed, if willing to undertake the experiment.

Having a good supply of swedish turnips (Drummond's improved purple top), that had been stored in the beginning of November, from a field in which I had left some drills standing, I thought, feeling deeply interested in the matter, that I could not have a more fitting opportunity of testing their feeding qualities, and therefore at once sent Dr. Aitken 20 bulbs of both kinds of turnips, and put up two sets of 10 sheep—three parts bred hoggs—drawn out of my regular feeding lot: commencing the experiment on the 25th February, and continuing it for six weeks.

The two lots when drawn turned out so nearly equal, that by the exchange of a light sheep for a heavier one, they weighed exactly 1256 lbs. each.

They were weighed after three weeks and also after six weeks, when the experiment ended. They were then killed, and the weight of dead meat ascertained, with the following results:—

	Lot 1, fed on Stored Turnips.	Lot 2, fed on Unstored Turnips.
20th February, live weight, . .	1256 lbs.	1256 lbs.
12th March, ,, . .	(1305) ,,	(1292) ,,
2nd April, ,, . .	1431 ,,	1390 ,,
Total gain in live weight, . . .	175 ,,	134 ,,
Weight of dead meat, . . .	707 ,,	707 ,,
Increase during first three weeks, .	49 ,,	36 ,,
Do. second ,, .	126 ,,	98 ,,

It will be seen that there is a great difference in the increase of the two lots during the first and second half of the experiment. This was due to the severity of the weather during the memorable storm in the beginning of March, and shows how powerfully the process of fattening is retarded by cold stormy weather. The increase during the first three weeks was little more than the increase per week thereafter, and the total increase represents what should have occurred in four weeks rather than in six.

The turnips were given in boxes of equal dimensions, those used for lot 1 containing 55 lbs., and those used for lot 2 containing 50 lbs. per box. Besides the turnips, each lot received an equal quantity of hay and cake (J. &. J. Cunningham's improved cotton cake), and the following were the quantities consumed:—

Lot 1.		Lot 2.	
Hay, ...	232 lbs.	Hay, ...	232 lbs.
Cake, ...	315 ,,	Cake, ...	315 ,,
122¾ boxes stored turnips,	6751 ,,	143½ boxes frosted turnips,	7175 ,,

Lot 2 thus consumed 424 lbs. more than lot 1, that is to say, about one-sixteenth more was eaten of the unstored than of the stored turnips. It may be remarked regarding the unstored turnips, that none were given in a pulpy state, but only such as could be sliced by the cutter. The increased consumption of unstored turnips may be explained either on the assumption that they were better relished by the sheep, or that they were less satisfying. That the increased consumption of unstored turnips did not yield a corresponding increase of live weight, leads us to infer that they were of inferior feeding quality to the stored turnips; but it must here be remarked that lot 2, which fed on the unstored turnips, were during the whole experiment a little looser in their bowels, so that the actual nutriment contained in the turnip was, on account of its slightly irritating quality, less capable of assimilation.

The following is the result of Dr. Aitken's analysis of the two sets of turnips, with his remarks thereanent:—

"FRESH TURNIPS—Average of 20 Bulbs.

	Frosted.	Unfrosted.
Water, ...	90·7	91·5
Solid matter, ...	9·3	8·5
	100·0	100·0
Solid matter in 20 bulbs consisted of—		
Albuminoid matter, ...	6·1	5·8
Sugar, cellulose, starch, gum, &c., .	75·1	77·9
Woody fibre, ...	13·5	11·0
Ash, ...	5 3	5·3
	100·0	100·0

"There is a difference in favour of the frosted turnips of 0·8 per cent. solids, and of 0·3 per cent. albuminoid matter, and a difference against them of 2·5 woody fibre; but, upon the whole, the results of analysis lead to the inference that the frosted turnips are a better feeding material."

The chief change which seems to have occurred from the frosting is the loss of moisture, so that the frosted turnips contained nearly one-tenth more solid matter on that account.

The analysis of the solid matter shows, however, that there have been lost to the turnips, along with the water, several soluble constituents, such as are contained under the term carbohydrates, and which include soluble cellulose, sugar, starch, fat, and several soluble nitrogenous matters.

With these analyses before us, we are able to calculate approximately the absolute amounts of the various constituents which were eaten by the two sets of sheep, viz.:—

	Lot 1. Stored Turnips.	Lot 2. Unstored Turnips.
Albuminoid matter, .	33·3 lbs.	40·7 lbs.
Carbohydrates, &c., . .	447·0 „	501·0 „
Woody fibre, ...	63·2 „	90·0 „
Ash, ...	30·5 „	35·0 „
Totals, .	574·0 „	667·0 „

Lot 2 seems therefore to have consumed 93 lbs., or about one-sixth more solid matter than lot 1.

The unexpected discrepancy between the live weight and weight of dead meat in the two lots of sheep—which, we find, was that lot 1, with 93 lbs. of extra live weight, only gave the same weight of dead meat as lot 2, can be accounted for by the greater amount of offal contained in lot 1. Both lots were weighed with their stomachs charged with food, and lot 1 must therefore have contained in their stomachs and intestines each 4⅓ lbs. more than the others; and thus it appears that lot 1 were able to retain their food longer, and perhaps digest it better, than lot 2. We therefore see, that in estimating the comparative value of feeding materials, it is not sufficient that we should know the relative amount of nutritive matter, as estimated by chemical analysis, but that we should take into account the physiological action of the food.

The experiment shows that while stored turnips contain an equal amount of nutritive matter with unstored turnip, the former has an irritating action on the intestines of sheep, which prevents the food being retained sufficiently long in the alimentary tract to enable the nutritive matter it contains to be properly assimilated. Another effect of the intestinal irritation referred to has yet to be noticed. Lot 1 were noticed throughout the whole experiment to have a better appetite than lot 2, and to eat their daily allowance of hay more quickly and more greedily. It seems certain, therefore, that if both lots had received as much hay as they could consume, there would have been a greater difference in favour of those fed on the unfrosted turnips.

The result of the experiment is, that there is little or no difference between the values of stored and unstored turnips in the feeding of sheep; but we find that lot 2 consumed one-sixth more in measured quantity of turnips, they having consumed 143½ boxes, while lot 1 consumed 122¾ boxes. I did not use—as previously stated—turnips in a pulpy state, so that the actual loss by frosting in such a winter as that of 1880–81 is not represented by merely the one-sixth of extra quantity made use of. I may add, that in each of the lots there were three ewe hoggs, and I found that their increase in live weight, as compared with the wedders, was nearly the same, being only one-fiftieth less.

The winter of 1881–2 having proved so much the opposite of the previous one, I resolved to continue the experiment for another season. I therefore commenced the same on the 11th March, finishing on 14th April—five weeks instead of six—with the following results:—

	Lot 1, fed on Stored Turnips.	Lot 2, fed on Unstored Turnips.
11th March, live weight, . . .	1294 lbs.	1289 lbs.
14th April, „ . . .	1520 „	1547 „
Gain in live weight, . . .	226 „	258 „
Weight of dead meat, . . .	749 „	755 „

Each lot consumed—

Hay, ...	240 lbs.	240 lbs.
Cake, ...	262 „	262 „
106½ boxes of turnips, each weighing 55 lbs., ...	5857 „	5857 „

The unstored turnips were, towards the end of the experiment, very much shot, but their feeding qualities do not thereby seem to have deteriorated, as the experiment shows them to have been of equal feeding value with the stored.

To show how the difference of seasons alone affected the feeding of sheep, I will put the two lots of hoggs fed on stored turnips against one another, with the results per week :—

	1881.	1882.
Hay consumed, ...	38⅔ lbs.	48 lbs.
Cake do., ...	52⅓ „	52⅓ „
Turnips do., ...	1125 „	1171 „
Increase of live weight, . . .	29⅛ „	45⅙ „
During the last three weeks, . .	42 „	
Turnips consumed do., . .	1168⅔ „	

The increase of the consumpt of hay is accounted for thus, that in 1881 lot 2 regulated the quantity, and therefore, as I formerly stated, lot 1 did not get as much as they could consume. The increase of the weight of turnips is caused by the bad week of 1881, and is not apparent when we compare it with the last three weeks of that season, neither is there during the latter period much difference in the increase of live weight. We may therefore assume, that in good weather hoggs will in spring, with moderate feeding, lay on a little over 2 lbs. of dead meat per week. We may now reckon how much a farmer's profits depend on the weather alone, in the feeding of sheep, by comparing the increase of weight in the two seasons, and the returns per acre of turnips, estimating this last at 15 tons, the hay at £5 per ton, the cake at cost price, and mutton at 10d. per lb. :—

	1881.	1882.
Gross returns per acre, .	£18 3 1	£27 0 6
Less hay and cake, . .	7 12 10	7 18 7
	£10 10 3	£19 1 11

Not taking into account the destruction of turnips by frost in such a season as 1881–2, but only the bad weather, we see how much of the agricultural depression at present prevailing can be set down against inclement seasons.

In conclusion, I have to record my deep obligations to Dr. Aitken for his valuable assistance in carrying out and reporting on these experiments.

HAYMAKING.

By Andrew Slater, Wyreside Cottage, Lancaster.

[*Premium—Five Sovereigns.*]

On purely pastoral, or farms of mixed husbandry, where a greater or less extent of land is retained as permanent hay meadows, the operation of haymaking becomes an important item in the work of the farm. Where hay forms the principal food for the winter keep of cattle, their appearance and welfare will depend in a high degree on the quantity and quality of that article. It is a well-known fact that mildewed or dusty hay is most pernicious to the health and condition of those animals who consume it; and although in many parts such stuff is their chief source of sustenance during certain portions of the year, it is surprising that a system more adapted for securing the hay crop in a better and more palatable condition has not ere now been adopted.

Having had some experience with the methods of curing hay in various parts of England and Scotland, it must be granted that by far the best article is made in the former country. Some may consider that that is owing to the superiority of the English over the Scottish climate for haymaking, and doubtless in some of the southern and midland counties such is the case; but here (Lancashire), where the hay is, as a rule, of as good a quality as is to be found anywhere, the climate is inferior to many parts of Scotland.

It cannot be denied that a considerable amount of fodder is lost annually north of the Tweed by allowing the hay to remain for too great a length of time exposed to the weather, either in cocks or otherwise, and not only is the nutritiousness of the herbage lost, owing to the action of rain or evaporation, but there are always a quantity on the outsides and bottoms of the cocks rendered useless, and their presence deteriorates a portion of the aftergrass, and not unfrequently causes a considerable depreciation in the crop of the following year. No doubt, a certain loss is sustained in a similar way on this side of the border, but that arises either through unpropitious weather or carelessness. The English farmer endeavours to get his hay secured, after being cut, in as short a time as possible; he thereby saves a considerable amount in labour, and preserves his crop in good condition. It should therefore be the object of every one to act in a like manner; for it must be remembered that hay long exposed to the action of rain becomes bleached and loses its nutritiousness; indeed, in many cases the soluble materials are entirely washed out of it, only the wood-like fibres of the stems being left; and when exposed for too great a length of time during even dry weather, it is considerably impaired in value, as it loses its colour and flavour, and if it is secured so that heat will not generate in the stack, it will frequently cut out in a dusty condition.

During the growth of grasses and clovers there is a continual secretion of saccharine matter in the plants, but which as the seeds ripen decreases, and when they become matured the herbage dries up, as it were, and the nutritiousness departs from it. It is when there is the maximum amount of this deposit in the grasses that the proper time for mowing the meadows has arrived, as it is on the presence of this sugar in the plants that the chief feeding qualities of the fodder depends. It is therefore reckoned, by competent authorities, to be when the majority of the grasses are in flower that the greatest amount of that substance is contained in the plants, and it is then that cutting should commence. The longer this operation is delayed after the herbage attains that state, the crop will be of less value, but should it be mown in time, it will be more valuable, although perhaps of rather less bulk; this will be made up, however, by the extra quantity of aftergrass.

The chief object in haymaking is to manage the crop so that it may be stored to keep in safety, and to come out of the stack of a richer flavour and in a more palatable state than when it was put in. That is brought about by fermentation, when no doubt certain chemical changes take place in the hay during that process, which alters its condition. Of course, there is a danger, if the crop has been got too hurriedly, of the stack becoming too hot, so that the fodder becomes "mow burnt" or takes fire, but that seldom occurs if due caution is exercised by those in charge. Hay, when it comes out of the stack of a brownish colour, is that most relished by all kinds of stock; they will consume every stalk, and cows thrive and milk better off such than when fed on hay that has either undergone but a slight fermentation or none at all.

The length of time that elapses by the English system between the cutting and stacking of the crop, depends upon the quality and weight of the growth, the quantity that is to be stored together, and above all, on the state of the weather. Rich well-manured meadows yielding heavy crops of nutritious grasses may be put together in stacks of from fifty loads and upwards, in sunny weather, on the fourth day after being mown; but it may, if the crop is only of medium bulk, be carried on the afternoon of the third day. We have occasionally during very fine weather secured some on the afternoon of the second day, but it required a continuous working to make it ready. On poorer meadows, with herbage of an inferior description, the grasses are sooner dried, and can be stored in fine weather, with little trouble, on the third day; and where only a dozen or twenty loads are to be put together, it may be frequently carted on the evening of the second day. Of course, if the weather be cloudy, a greater length of time intervenes between the cutting and carting; and if rain sets in during the hay harvest, as it frequently does, an unlimited amount of time may elapse before an opportunity occurs for securing it. Under such atmospheric conditions, the work becomes both tedious and costly, and the fodder of an inferior quality.

The practice of putting a load or two together in ricks throughout, or on the margin of the meadows, is no doubt a convenient one for the time being, but it is doubtful if there is anything else in its favour, as a considerable amount is expended in labour, by first ricking, and afterwards carting and storing it in greater bulk elsewhere; there are also a portion of the tops, outsides, and bottoms of the ricks rendered unfit for food, and a loss is sustained in seeds by being changed from one position to another; and as there is not a sufficient body of hay together to cause it to sweat thoroughly, it does not turn out with the requisite flavour. Supposing, however, that a certain amount of heat did generate in the rick, it is highly probable that it would not have become properly cool before it had to be removed somewhere else, and owing to the sudden lowering of the temperature by being opened up, there would be a considerable quantity of moisture throughout the hay, which would ultimately render it more or less, according to the amount, into a musty and badly flavoured condition. The hay should therefore, when ready, be at once taken to the stack or wherever it is to be permanently stored, to which a supply may be added daily until the requisite quantity is got together. If a few days intervene between the last, and before another addition is to be added, it will be necessary to remove the damp hay off the upper surface of the stack, which was caused by the vapour arising from the body of hay underneath, to prevent a mouldy seam from forming at that point.

A greater number of men should not be allowed on the stack than is necessary to keep the forkers going, as it should be allowed to settle of itself; and it will be found, if it has heated satisfactorily when cut into, to be in a far more solid condition, and therefore in a better state for removing after being trussed than unfermented hay that has received an unlimited amount of tramping.

Large stacks should not be cut into for at least three months, as they will take that length of time to cool down to their normal condition.

To prevent rain from damaging the hay when the stack is in progress and until it is thatched, a waterproof cover will be found useful, having the necessary appendages, viz., a pole for placing erect at each end of the stack, and another stretching between them, with pulleys and ropes for raising and lowering the cover when placed across the horizontal pole.

With these observations, we will now proceed to give in detail the different daily operations as practised by us from the cutting to the securing of the crop.

On the first, as on all subsequent mornings, an early start is made with the mowing machine, and a section is cut off if possible by breakfast time (nine o'clock), which is at once shaken out either by hand or by the hay tedder. If the weather be sunny it is turned with the rakes before dinner, and in the middle of the afternoon it is run into small single rows; that is done by the workmen with their rakes drawing in one direction about two of the rows that were previously turned into one, and they keep a foot on each side of them as they move along—straddle them, so to speak—so as to keep them compactly together. After the whole section has been gone over in the way just mentioned, they return to the starting-point and put it into what is termed foot-cocks, of a size suitable to the state of the grass; this is performed by the operators commencing at the ends of the rows, and with their rakes draw cleanly about a couple of feet of their length towards them; they then face about and place one of their feet close under that gathered, and reaches forward, drawing together with the rake as much as will complete the cock, they then with a jerk of the rake and foot place that which was first drawn in underneath and the last on the top. This is a most expeditious and satisfactory method of securing the grass from the effects of showers or dew, as rain does not penetrate readily into them, and if they are made before the grass becomes cool they dry wonderfully during the course of a night.

On the second day the grass that was cut after breakfast time on the first day and previous to that time on this is thoroughly shaken out, and so soon as the ground has become dry, the foot-cocks are shaken out with the hand, and particular care is observed in clearing their bottoms properly off the ground, and separating any lumps of grass that may have been left unshaken at first. That which was tedded out in the morning is turned, if possible, before dinner, following with the same operation on that which was broken out of the cocks. The whole is then, about mid-afternoon, prepared for cocking by first raking the grass into single rows, and then the hay that was shaken out of the cocks in the morning is rowed in a similar manner, only a greater bulk may be drawn together. It may all remain in that state until five or six o'clock, when the first is put into small foot-cocks, as previously described, and the latter into larger; but if there be signs of rain, and the hay fairly dry, it is desirable to place it into double cocks, that is, the hay is drawn together as for a single cock, but when the second is drawn together, it is lifted, before it is turned up, with the rake on one side and the hand on the other, and laid neatly on the top of the first made; any hay that may be scattered between it and the end of the ungathered row is raked forward into the latter.

On the third, as on the previous mornings, all the grass lying in swaths is shaken out, and immediately the ground is sufficiently dry the large cocks are scattered and afterwards the foot-cocks; the grass that was shaken in the morning is then turned, next that which was in large cocks, and lastly that which was in the small ones. After noon, if the weather has been dry and sunny, and the crop a medium one, the first mown hay will be ready for stacking, but possibly it may be advisable to again stir it, either with the rakes or reversing the action of the hay tedder, and passing it over it, the haymakers meanwhile rowing into small rows the grass first tedded, and in larger ones that which was shaken out of foot-cocks in the morning. Should that, however, which was first mown, either through dull weather or any other cause, not be in quite a satisfactory state for carting, it is run into double rows by one man drawing the hay inwards with his rake as for a single row, but with both feet on the cleared side, and another following drawing from the opposite direction into the row made by the first, keeping a foot on each side of the double row thus formed as he goes along. That is then in the evening put in large double cocks in the same way as already described for the extra-sized single rows formed on the second day; all the smaller rows are then cocked neatly up.

On the fourth day, if it was necessary on the day previous to put up the double cocks just noticed, they are, as soon as the dew is off the ground, shaken out. Afterwards, when any dampness that may have gathered in their interior during the night has been removed, or whenever, if the day is likely to be fine, it can by the pressure of other operations be reached, it is drawn into large windrows with the aid of a horse-rake or by forks and hand-rakes, and either forked on to carts and conveyed to the stack, or if the stack be in the meadow, it may be drawn to it by some of the more convenient methods. The other operations on this, as on all successive days, follow in the same order as previously indicated until the whole crop is secured. It frequently happens, owing to the continuance of fine weather and the pressure of other work, that the grass shaken out in the morning is left uncocked; but we always endeavour, when it has reached anything like the semblance of hay, to cock it every evening. In unsettled weather it is unadvisable to have more on hand than can be properly managed with the strength at command, although grass when cut dry may remain in the swathe for five or six days without suffering much damage, but at the end of that time it should be turned over to prevent it from turning yellow underneath, and if fine weather sets in it will be made into hay with little trouble. Grass that has become discoloured and bleached by exposure will partially regain its colour and flavour if it is got in in a thoroughly dry condition, but containing some of its natural sap, so as to generate a certain amount of heat when stored, and it will be consumed readily enough by stock, although they may not do so well upon it. If, however, the rain water is not properly evaporated from the hay before it is stacked it will invariably become mildewed. In fine weather the mowing machine should be kept going whenever the horses can be spared, so as to reap the benefit of every hour of sunshine, and every effort should be made to secure on each day all that is in a fit state for storing.

The cost of haymaking by the foregoing process, in this district, will average, taking one season with another, about twenty-two shillings per acre, exclusive of horse labour; but if, instead of having to pay all our labourers 5s. 6d. per day during the hay harvest, they received only their ordinary wages, the cost would not much exceed half that amount. The farmers in general secure theirs at a less figure than the foregoing, as they do not, as a rule, expend so much labour upon it, cocking it only when there is any likelihood of rain, and as there are on most farms, barns for the accommodation of the hay, which is built therein in mows, containing from a dozen to twenty-five loads in each, the hay can be stored to keep in safety when in a considerably softer state than when put together in greater quantities.

The practice of trussing the hay into convenient-sized trusses, out of the stack when it becomes necessary to remove it for use, is an excellent one, and ought always to be adopted, as there will be none wasted if due care be exercised in the operation; and for convenience in loading and unloading, and in packing it together in lofts or elsewhere, or for retaining its flavour, it is far superior to the slovenly system of forking it loosely from the stack and storing it again in the same state where it may be required, as every time it is moved there is a considerable waste of hay and seeds, and it cannot be packed in the same compass, nor does it keep so well in a loose state wherever it may be put; but more especially is that so when it is lodged in lofts over stables, as there the moisture and aroma arising from the horses permeates the whole stock, renders it less palatable, and entails further waste. That is to a certain extent avoided with trussed hay, as the trusses are in a solid condition and can be packed closely together, so that at the most their outsides would be the only portions affected.

Supplementary Remarks.

As to the making and curing of ryegrass and clover hay, a greater length of time must intervene between the cutting and storing of the crop, as it ought to be handled as seldom as possible, so that the leaves, seeds, and flowers of the different varieties of plants of which the crops may be composed be preserved entire. These crops should, therefore, be mown when perfectly dry, and allowed to remain in the swathe until the second or third day, when it should be turned cleanly over with the heads of the rakes, allowing it in that position to have the benefit of a couple of days' sun, cocking it, however, in the evening of the second day before it has become cool. It may have to remain in these cocks for two or three days, but that will depend on the state it was in when put together, and also upon the weather. Before carting it to where it is to be permanently stored, it may be necessary to turn the cocks upside down, or open them up, so that any dampness that may have gathered on their bottoms or insides may be removed. It may be pointed out that these crops should never be ricked in small quantities in the fields, as there will be a greater amount of waste take place in their removal than with the meadow hay crop, and like that crop a moderate fermentation is necessary so as to add to its value as an article of fodder.

It sometimes occurs that, during unsettled weather, the crops may be stacked too hurriedly, consequently there will be a risk of the fodder becoming overheated. Under such circumstances, some precautions should be taken when building to counteract that tendency—such, for instance, as having a bag filled with hay or chaff in the centre of the stack, and building around it, but drawing it up as every layer or two is added; there will thus be a vacuity formed for the passage of air, and it will materially assist in preventing overheating. When hay is put together in too soft a state, it settles and generates heat quickly; if, however, the settling was prevented, the danger of it becoming "mow burnt" would be obviated. Now, one reason why hay can be stored in barns in a softer state than into stacks, is because the ends of the "mows" are in contact with the walls, and these prevent it from becoming consolidated. To prevent that taking place in stacks or very large "mows," a spruce tree with a foot or two of the branches left on the trunk, is sometimes placed erect in the centre of the intended stack and the hay built around it; of course, if the stack is a large one, two or more of these may be used. Although these hints are given, it seldom is necessary in practice to adopt them, and it is better that it should be so, as the best hay is made when no artificial method of tampering with the regular course of the stack is used further than propping it to keep it in an erect position, and from settling too quickly.

When fermentation is going on satisfactorily in stacks or mows the steam will arise pretty freely, and the smell arising therefrom can be felt at a considerable distance; in the course of a month or six weeks this aroma feels something like the smell of sweet tobacco, and can only be felt at a distance of a few yards. If it is becoming too hot the smell will be quite different, and can be recognised at once, and the utmost attention should then be paid to the stack. If an iron rod has not been previously inserted into its centre, this should at once be done, and when withdrawn in the course of an hour, if it is too hot to be touched by the hand, then one or more openings should be cut from the top downwards to within a few feet of the bottom, of a size sufficiently large to permit the men to work freely; these as soon as made should be filled firmly up with old dry hay, into which the hot vapour will escape, and it can, when fully saturated, be removed and a fresh supply put in its place. Should the opening thus formed be left vacant, the temperature in the stack would be too suddenly reduced, causing a considerable quantity of moisture to be retained amongst the hay, which would ultimately cause it to become mildewed.

No body of hay ought to be cut into unless it is absolutely necessary to do so to prevent it from being destroyed, for it ought to be remembered that overheated hay is much superior to that which is full of dust or which has become mildewed.

ACCOUNT OF THE SHOW OF THE HIGHLAND AND AGRICULTURAL SOCIETY HELD AT GLASGOW IN 1882.

THE Fifty-fifth Show of the Society was held on the 25th, 26th, 27th, and 28th July, on the Green of Glasgow, kindly lent by the magistrates of the city, whose liberality and cordial co-operation on this, as on all former occasions, have been gratefully acknowledged by the Society.

For some years the shows of the Society have not been favoured with propitious weather, and there was no improvement in this respect on this occasion. About half-past two o'clock on the afternoon of the first day (Tuesday) rain fell in torrents, and continued to fall, though not so heavily, till the hour of closing. For some time the stock had to be withdrawn from the rings, and when the judges resumed their duties they had to do so in some places over the feet in water. With a view to the comfort of visitors. planks and ashes were laid down at the worst parts. Wednesday was dry, but the ground was in a very unsatisfactory state, and an additional quantity of ashes and planks were laid down. More rain fell before the public were admitted on Thursday, rendering many parts of the yard a quagmire. The last day proved fine, and the yard was thronged with visitors. The newspaper reports of the condition of the showyard affected the attendance, hence, in place of a surplus, there has been a severe loss to the funds of the Society, as will be observed on reference to the accounts.

The exhibition consisted of the following entries in the different classes of stock :—

Cattle.

	Bulls.	Cows.	Heifers.	Oxen.	Total.
Shorthorn, ...	24	11	16	...	51
Ayrshire, ...	31	51	37	...	119
Polled Angus or Aberdeen, .	28	7	33	...	68
Galloway, ...	14	7	27	...	48
Highland, ...	23	16	28	...	67
Fat Stock, ...	...	...	2	15	17
Extra, ...	2	2	2	...	6
Total, .	122	94	145	15	376

Horses.

	Stallions.	Entire Colts.	Mares.	Fillies.	Geldings.	Total.
Agricultural Horses, .	20	101	26	80	7	234
Hunters and Roadsters, .	...	...	21	8	35	64
Ponies, ...	3	...	13	...	11	27
Extra, ...	5	...	1	...	...	6
Total, .	28	101	61	88	53	331

Sheep.

	Tups.	Ewes.	Gimmers.	Lambs.	Wethers.	Total.
Blackfaced, ...	62	50	47	50	...	209
Cheviot, ...	38	18	18	18	...	92
Border Leicester, . .	46	15	27	...	...	88
Long-Woolled, other than Border Leicester,	2	3	6	...	...	11
Shropshire, ...	13	9	18	...	...	40
Short-Woolled, other than Shropshire,	...	...	...	...	...	...
Extra Section, ...	...	...	...	...	40	40
Extra, ...	4	...	...	...	6	10
Total, .	165	95	116	68	46	490

Swine.

	Boars.	Sows.	Pigs.	Total.
Large Breed, ...	5	8	6	19
Berkshire Breed, . . .	1	7	3	11
Small Breed, ...	5	5	9	19
Extra, ...	1	1	...	2
Total, .	12	21	18	51

Poultry, ...	253 entries ; 310 head.
Dairy Produce, Butter, . .	91 entries ; Cheese, 31 entries.
Implements, ...	2622 entries ; 201 exhibitors.

The following is a comparative view of the exhibition of the stock, implements, and dairy produce, the premiums offered, and the receipts (gate money and catalogues) at each of the nine shows at Glasgow:—

Year.	Cattle.	Horses.	Sheep.	Swine.	Poultry.	Dairy Produce.	Implements.	Premiums.	Receipts.
1826	226	49	148	24	...	...	50	£186	£275
1828	314	42	112	69	38	...	30	277	400
1838	461	121	274	47	...	39	62	731	849
1844	558	210	568	64	50	277	357	1600	1892
1850	484	164	639	85	172	316	577	1359	1909
1857	415	240	669	112	429	234	610	1500	2415
1867	286	212	575	80	450	143	1344	1600	3005
1875	411	405	628	58	665	152	2220	2665	6231
1882	376	331	490	51	310	122	2622	2878	3242

Owing to the continuance of the Privy Council orders prohibiting the import of animals from England into Scotland, in consequence of foot and mouth disease in England, 18 head of cattle, 46 sheep, and 21 swine, entered by English exhibitors, were not present.

Principal Williams, Edinburgh, and Principal M'Call, Glasgow, who acted as veterinary inspectors, reported that the health of the stock was good.

Cattle.

The Shorthorns were not so good as the judges expected to find at a general show of the Society. The aged bulls were the best, four of them being very good. In the other sections for bulls there was nothing very extraordinary. Cows were a very poor exhibition. The first prize two-year old heifer was a good one, but the others were not very striking. The yearling heifers were a good lot, particularly the first and second prize animals.

The show of Ayrshires was exceedingly good, there never having been so many fine animals at any previous meeting of the Society. The aged sections were numerous and even, but nothing striking as to quality. The one-year old bulls, the two-year old and the one-year-old heifers were considered the best exhibition ever seen at a show.

Of Polled Angus or Aberdeen cattle the section of old bulls was a very good one, and those placed first, second, and third were animals of great merit. Any of them would have been considered good enough to have been creditable first prize takers at many former meetings of the Society. Two-year old bulls were also a good lot, but the animal placed first was one of the best specimens of the breed exhibited, and took his place in the prize list at once, with general consent. The others were quite an average showyard lot. The yearling bulls were very promising, and the class was a level good one. Only four out of the seven entries of cows were forward, but those placed before the judges were exceptionally good. It may be noticed that the cow that won the first prize has had a wonderful showyard career at the Society's meetings, having been placed first as an yearling, as a two-year old, and now as a cow, when three years old. The two-year old heifers were a splendid lot, the first, second, and third prize animals taking the same position in the prize list as was assigned to them at Stirling in 1881. The yearlings were the largest class, and, as a lot, were perhaps the show in the yard. Many really good animals had to be passed over without notice, and the whole class might have been commended had the rules allowed such to have been done.

The display of Galloways was very good. In the section for aged bulls there were five entries, three of them being animals of great merit. The first and second prize bulls were unusually good specimens of the breed, and it was remarkable that they were full brothers. The first prize bull, "Harden," was one of the best Galloway bulls that has been exhibited in recent years. The Directors decided on painting a portrait of this bull as a specimen of the breed. There were three entries in the section for two-year old bulls. Those carrying the first and second prizes were fairly good specimens, but there was nothing in the section of exceptional merit. Of yearlings there were six entries, but only the first and second prize animals call for special mention. The first was of great merit, while the second combined much substance with excellent blood. The seven entries in the class of cows were all good, the first four particularly so. The one placed first had a decided advantage over her rivals, being forward in calf and not in milk. There were ten entries of two-year old heifers, all fairly good, and included four animals of excellent quality. Of yearlings there were seventeen, fully half of them being good. All the prize animals possessed high individual merit, but there was in this and the preceding section less uniformity of character than have been seen at some former shows. As a whole, the exhibition of Galloways was excellent, and it was highly satisfactory to find not only an increase of number and improvement in quality, but a growing demand for the breed, for exportation, at fairly remunerative prices. There is, no doubt, increased attention being paid to the breeding of Galloway cattle, with every prospect of an increase in the numbers of both breeders and exhibitors at future exhibitions.

The Highland cattle formed a fair and interesting collection. Although there were not many aged bulls, the specimens shown were very good, particularly the first prize animal. The younger bull sections were very creditable on the whole. The female sections, both cows and heifers, were really good, and above the average.

The show of fat stock was not large, but every animal possessed considerable merit. The first prize Highland oxen were very fine specimens of their breed. The first prize two-year old ox in the class for "any other pure or cross breed" showed excellent symmetry and early maturity.

Horses.

The stallions for agricultural purposes were good in all the classes, some of them being exceptionally so. The entries in the aged class numbered a score, and the best of them were really good animals. The first prize horse had short legs, but he had considerable substance, capital action, and uncommon quality. The second prize one had a large frame, with strong flat bone, and he seemed well fitted for breeding big horses for heavy draught. The animal to which the third ticket was awarded had just proportions and excellent action, and the others placed were so good that in some years when the quality is not so good they would have been further up the list. The three-year old class had twenty-four entries; and even though the merit was high, it was not quite equal to that in the aged class. The first four in the prize list were really excellent horses, though they differed somewhat in their individual characteristics. There were no fewer than thirty-one two-year old colts entered, and the quality all over was fairly good. The one placed first was a stylish promising colt, and several of the others were close upon him. The yearling entire colts were remarkable, if not unprecedented, for their number and quality, there being no fewer than forty-six entered in the catalogue. Those to which prizes were awarded were uncommonly good, while not a few to which no tickets were assigned were possessed of great merit, and some of them may probably turn the tables on those who were their successful rivals. On this occasion it was gratifying to find that, while in recent years such a large number of first-class Clydesdale horses had been sent out of the country to America and elsewhere, the breeders are not acting on the shortsighted policy of "selling the goose that lays the golden egg"; for, unless really good blood was being retained, there could not be such a very numerous display of first-rate young colts as were brought under the inspection of the judges at Glasgow.

The mares were a grand class, short-legged, good action and substance, and quite equal in merit to most of the Society's shows. The geldings were a very superior lot, as might have been expected at Glasgow. The family lots were an interesting feature in the showyard, but not up to expectation, owing to many of the best animals having been bought up for going abroad.

There was a large display of hunters and roadsters, and some good little fancy ponies, which attracted a great deal of attention.

Sheep.

The display of the blackfaced breed was the principal feature in the exhibition of sheep. In the section for aged tups the sheep shown were rather above the average of those exhibited at any of the recent shows of the Society. Of the animals awarded the chief prizes no finer specimens, as regards size, symmetry, style, and wool, have been seen during recent years at any show, either local or general. Owing to the severity of the lambing season of 1881, and the unsettled condition of the weather of the summer which followed, only a rather qualified opinion can be expressed as to the shearling tups, as from the cause stated the animals had been slow to mature, and, in consequence, did not look so well filled out or so symmetrical in shape as could have been desired. In the section for ewes with lambs, it was a difficult and rather invidious task to place the prize animals, and it falls to be stated that the whole were somewhat equal. In the section for shearling ewes or gimmers, the judges had no difficulty in placing the first prize pen, while the others displayed much of an equality. The first and second prize pens in the family class were of an unexceptionable quality, whilst the others deserved to be ranked as really good animals.

The Cheviots were not a large show. The greater portion of the tups, both old and young, were good, but the ewes and gimmers were not.

Although the entries were not so numerous as on some former occasions, the show of Border Leicesters was a fairly good one.

The Shropshires, although few in number, were good in quality. The prize aged tup was a grand representative of the breed, and should prove a valuable sire. The winning ewes in both sections were also very good, having a close fleece and firm flesh.

Swine.

Pigs were fairly numerous, and the general quality of the animals shown was very good.

Poultry.

The various sections for Dorkings were the most meritorious, and many of the exhibits were in all respects quite equal to those met with at the largest shows. The number of entries in this department was forty-eight; the Cochin Chinas and Brahmas were fair classes, but the entries were small. The Scotch greys were good; the breed is considered very useful and well worth encouraging; twenty-five pens were entered in the four sections. The various sections of Hamburgs were fairly good. In game the entries were small, but some of the exhibits of great merit. All the duck classes were very good, particularly the Aylesburys and Rouens, and these are the two most useful breeds. Turkeys and geese were not numerous, but of fair average quality.

Dairy Produce.

The cheese exhibited was a small show, as was to be expected at the early season. The quality was fair, but not finer than cheese shown at former shows of the Society held in Glasgow. Butter was a good show, and the quality was very good; but there has been no improvement in the quality of the dairy produce for some years.

Bee Husbandry.

The Caledonian Apiarian Society held their annual show in the bee tent erected for their use in the south-west corner of the showyard. Notwithstanding the wet season, there was an excellent display, and any deficiency in honey exhibits was in a great measure compensated for by the varied and most extensive display of hives and bee gear of every description. The growing interest of the general public in this department of husbandry is certainly very marked since the first exhibition held in Edinburgh in 1877, and, notwithstanding the wet weather, there was no interruption in the driving and manipulating operations carried on in the covered tent, to the great delight of the visitors, many of whom were the very class this Society aims at benefiting, such as cottars, railway surfacemen, and all who had a rural profession. They may easily supply our markets with home-gathered honey, which is by far the best, and thus keep foreign imports at bay. The Society's medals were gained by Mr. Sword, Falkirk, and Mr. Wood, Benmore.

Implements.

The show of implements was the most extensive ever held under the Society's auspices. The greatest novelties in the yard were the sheaf string binding machines, and the new hay and corn stack drying fan, which the Society arranged with Messrs. R. A. Lister & Co., Dursley, to show in operation each day. Owing to the extremely wet weather, it was impossible to get the hay *free from water*, and, consequently, the exhibition was a failure. Messrs. Thomson & Co., Gracechurch Street, London, exhibited a new enamelled iron for roofing, which attracted great attention. The Aylesbury Native Guano Co. exhibited their *patent* for purifying sewage, a subject of very great interest both to the agriculturist and the public. A new feature was the exhibition of litter for horses made of compressed peat moss. The great agricultural implement manufacturers were present in force, and, in spite of the very unfortunate weather, the show was remarkably good in a business point of view.

TRIAL OF SHEAF STRING BINDING MACHINES.

On Monday the 28th August, a meeting of the judges of sheaf-binding machines was convened at the Queen's Hotel, Glasgow, by Mr. Menzies, the Secretary of the Society. The judges present were—Mr. Thomas Mylne, Niddrie Mains, Liberton, Edinburgh (chairman of the Society's Machinery Committee); Mr. James Biggar, yr. of Chapelton, Grange, Dalbeattie; Mr. John Findlay, Springhill, Baillieston; Mr. James Shaw, Skaithmuir, Coldstream; and Mr. Wilson Hartnell, M. Inst. M.E., Benson's Buildings, Park Row, Leeds. After reading over the printed instructions prepared for their guidance, they left Glasgow at half-past one, for an inspection and examination of the machines at Gladstone Farm, near Bishopton.

It rained the whole of the afternoon, which prevented the possibility of any trial of the machines in the field, but this was perhaps no disadvantage ultimately, as it confined the attention of the judges exclusively to a critical examination of the machines themselves. The machines exhibited were as follows:—one by Messrs. J. & F. Howard, Bedford; one by Mr. Walter A. Wood, London; and two by Messrs. R. Hornsby & Sons (Limited), Grantham. There was also a machine by Messrs.

Kingsford, Fairless, & Co., Kingston-on-Thames, for lifting up and binding after an ordinary side-delivery reaping machine.

Messrs. Kingsford, Fairless, & Co.'s machine could not be tried owing to the want of a side-delivery reaper, which they had failed to bring forward, and could not get supplied with in the neighbourhood.

Messrs. Hornsby & Sons' second machine, being considered by the judges to be practically a duplicate of their other machine, was not allowed to compete.

The general description of the sheaf-binding machine is as follows:—The cut corn falls on to a travelling web or platform; it is then lifted between two travelling bands or webs to the top of the inclined packing table. Here packing arms push the straw against a resisting arm, and form the sheaf. When the sheaf is sufficiently packed, the resisting arm—which is held in position by a spring—yields to the pressure, and thus puts in gear the sheaf-binding mechanism. The needle then comes forward, and carries the string round the sheaf, the knot is tied, the string cut, and the sheaf ejected, leaving the end of the string held tight for the next sheaf to be packed over it. Details of the principal parts are given in the annexed list.

The reaping knives of Messrs. Hornsby's machines were driven in the usual way direct from a crank pin. Those of Mr. Wood and Messrs. Howard were driven by the intervention of a rocking shaft and an extra connecting rod. The tying and binding apparatus of Messrs. Howard's and Messrs. Hornsby's machines were almost identical, Messrs. Hornsby, however, having an additional lever to hold the string in position while the knot is being tied. The binding mechanism of Mr. Wood's machine appeared to be more substantial, and more easily understood by an ordinary mechanic. Although his packers were simple, those of Messrs. Hornsby and Howard were considered to be more efficient.

Mr. Wood and Messrs. Hornsby could readily traverse the needle and knotter from side to side whilst their machines were at work. Messrs. Howard could not in this way vary the position of the tying string on the sheaf. They act on the butt end of the sheaf by means of a short inclined band and guide board, which will hereafter be called the "butting band," which to a certain extent effected the same purpose. Messrs. Hornsby also had this butting band, but Mr. Wood does not adopt this contrivance. These specialties were afterwards noticed to have considerable influence in the formation and delivery of sheaves. The band rollers and the reels in all the machines were driven by "Ewart's" patent chain. In Messrs. Howard's machine the three main bearings were connected by one malleable casting; and by means of a clutch between the bearings, all the working parts, including the reel, can be stopped. In the other machines the stoppage of all the working parts, except the reel, was effected by shifting the pinion on its spindle. Messrs. Hornsby's machine alone was supplied with the means of varying the speed of the knives and also of the binder. Each machine could produce several sizes of sheaf. They are all fitted with arrangements for travelling endways on roads, so as to pass through an ordinary gateway. Messrs. Hornsby and Howard applied two side wheels (on which the machine nearly balances) and the ordinary pole, or (in Howard's case) a pair of shafts for a pair of horses. Mr. Wood pulls his machine from the opposite end, and attaches in addition to the side wheels, a swivelling wheel behind to support the platform. The following particulars in regard to some of the leading parts may be here noted:—

	Howard.	Wood.	Hornsby.
Main driving wheel (diam. × width),	40″ × 7½″	40″ × 7″	40″ × 7½″
Material, ...	Wrought iron.	Wood and iron.	Wrought iron.
Revolution of crank disc per revolution of driving wheel, . .	14½	...	Fast. Slow. 19¼ 13⅞
Stroke of knives all having a double throw, ...	6″	6″	5½″
Centre to centre of knives, . .	3″	3″	3″
Width of cut, ...	5 ft.	5 ft.	5 ft.
Approximate angle of cutting edge with finger, ...	30°	40°	40°
Length of cutting blades measured at right angles from cutting bar,	2″	1⅜″	1 5/16″
Distance the machine travels between each cut, ...	2⅛″	...	Fast. Slow. 1⅝″ 2 ³ ″
N.B.—Each knife passes through 2 fingers in its 6″ travel, making 4 cuts to each blade during one revolution.			
Width of travelling bands or webs for platform, ...	4′·2½″	...	4′·3½″
Elevators, ...	5 ft.	...	5 ft.
Butting band, ...	9″	None.	...
Distance the machine travels from the time the sheaf-binding apparatus is put in gear to the time it stops,	4 ft.	...	Fast. Slow. 4′·10½ 7·0
Size of side travelling wheels, .	25″ × 3″	32″ × 3¼″	24″ × 3″
Weight of machines ready for work,	16⅝ cwt.	15½ cwt.	15 cwt.

Durability.—In regard to wear and tear this is necessarily considerable, but not more proportionally than in ordinary selfdelivery reaping machines. With the horses walking at the rate of three miles an hour, and allowing for 6 inches of the knife not cutting, the machine is reaping at the rate of 1·6 acres per hour, from which some allowance must be made for stoppages. The speed of the knife is necessarily as high as in other reapers, and the delivery webs have also to be driven at considerable speed, but there does not appear to be any heavy strain on the distinctive mechanism of these machines, viz., the tying apparatus, and its action is simple, easy, and deliberate. Care has been taken by several special arrangements, and by the free use of steel spindles and brass bearings, to reduce the wear and tear, with more or less success.

Access to the Bearings for Oiling is easily obtained in any of the machines, and the means of lubricating are good.

Facility for Repairs.—On the whole, the machines were judged to be nearly equal in this respect, and the repairs for the most part can be readily made.

Ease of Adjustment.—In regard to ease of adjustment, Messrs. Howard's and Messrs. Hornsby's machine could be raised and lowered on their driving wheels by means of a worm and worm wheel. Mr. Wood did this by means of a ratchet-gear, which appeared less convenient. All had a ready and simple means of adjusting the "land" wheel supporting the platform.

The following adjustments could be made by the driver whilst in his seat. Each machine had a lever for varying the height of the cut by tilting the platform. The reels of Mr. Wood's and Messrs. Hornsby's machines could be raised or lowered and put backwards or forwards by two separate levers.

Messrs. Howard's machine made these adjustments jointly by rotating the axis of the reel round the axis of a worm wheel, at a radial distance adjustable only on stopping the machine. All the machines could be thrown in and out of gear by the driver. The driver on Mr. Wood's and Messrs. Hornsby's machines can alter at will the position of their binding apparatus, so as to bring the string nearer to or farther from the butt end of the sheaf. Messrs. Hornsby and Messrs. Howard's driver could also alter the slope or incline of their butting bands. If, however, the sheaf had unexpectedly to be tied nearer the butt, Messrs. Howard's driver must do it by a very considerable incline of the butting band at the risk of impairing the squareness of the butts; whereas Messrs. Hornsby's driver may leave this butting band sufficiently inclined to pack the butt ends level, and could move the string to any position on the sheaf by means of the arrangement above referred to. Mr. Wood had no butting band, trusting to the corn falling evenly on the first apron. The facility with which the machines could be prepared for travelling on the road after reaping, and *vice versa*, was tested by noting the time required for these operations, which was done by two men and varied from twelve to twenty minutes (twenty minutes being ample time).

Ease of Management.—Each machine could be managed by the driver, who readily manipulated the various adjustments under his control.

Simplicity.—On the whole Messrs. Howard's was the simplest machine, but it appeared doubtful whether they had not in some respects sacrificed efficiency to simplicity. Their machine proved rather the heaviest in weight, and required the greatest pull out of gear and out of work, averaging about 2 cwt. as against about 1¾ cwt. in Mr. Wood's machine, and 1½ cwt. in Messrs. Hornsby's.

Weather.—On Tuesday morning (29th August) the judges assembled at eight o'clock on the trial field, at Gladstone Farm, and although rain had fallen heavily during the night it subsequently turned out fine, with the exception of one or two slight showers. The sun came out from time to time during the day, and the clouds gradually broke away, the latter part of the day being decidedly fine. A light wind having sprung up, the ground was soon in very fair order for a harvest day in the west of Scotland.

Description of Fields.—Three suitable fields were provided of wheat, barley, and oats respectively.

Wheat.—This field was ploughed in rather high ridges of about 16 feet wide. The ground had a steep slope towards the south-east. It was a good average crop, which, however, by the action of the wind was so much inclined towards the north-east, that the machines could only cut it satisfactorily in travelling westward and southwards. The cutting, along the bottom eastwards and uphill northwards, was therefore discontinued.

Barley.—The barley field was nearly level. It had been ploughed in breaks with a furrow every 40 yards. The machines cut round three sides of it, but after a few trials did not cut whilst travelling northwards, on account of the very soft state of the ground, and the corn being considerably laid in a northerly direction, with an undergrowth of damp weeds.

Oats.—The oat field was almost level. The ground had been very slightly ridged, and it would be considered very favourable for a reaping machine. It was a fine heavy crop, and had not been much affected by the wind. It was cut right round by all the machines.

The machines, in the first instance, were weighed and then taken into the trial field in the following order, which was afterwards maintained during the day. Messrs. Howard, first, who took, in all cases, the outside of the field; Mr. Wood, second; and Messrs. Hornsby last.

PRELIMINARY TRIALS.

Each competitor was allowed one round to adjust his machine. The dynamometer was then attached to each machine, when they were running out of gear, in gear, and in full cut, both on the level and up and down hill; but on account of the irregularities of the ground and the absence of an integrator, no very exact measurements could be taken.

With the exception of one side of the wheat field, where the machines had to cross the ridges, the cutting was fairly good and generally quite low enough; but owing to the position of the carrying wheels (about 2 feet behind the knives) and the distance they are apart, it will be difficult to obtain an extra low cut where the ground is very irregular. Across the wheat field, where the heads were lying a little to the horses, there were some straggling stalks both in the sheaves and on the ground; but down the ridge in wheat, where the crop was more favourably inclined towards the machinery, and particularly in the barley and oats, the cleanness and neatness of the sheaves and also the cleanness of the ground, left little to be desired.

In the wheat, Messrs. Howard's machine several times failed to tie the sheaves, and made a number of small ones, apparently from the butt of the sheaves not getting freely away, and so preventing the regular action of the binding apparatus, and it occasionally required some assisting by hand. After some adjustments had been made, it was only once or twice noticed to fail in tying. With few exceptions, the sheaves were uniform in size. Mr. Wood's machine followed, and met with similar experience, making several small sheaves, and occasionally requiring some assistance in delivering the sheaf where the butts contained much grass and undergrowth. Messrs. Hornsby's machine was very quickly adjusted, and was only noticed once to fail in tying during the whole day, and that apparently from a defect in the ball of twine and its consequent entanglement in the box.

They had apparently perfect confidence in their machine, and expressed the wish at once that the driver should go unaccompanied by any assistant.

ACTUAL TRIALS.

Closeness, Cleanness, and Evenness of Cut.—All the machines cut close, clean, and even, in the final trials on oats, and in this respect might have secured the same number of points, had it not been that in the early part of the trials Messrs. Howard's and Mr. Wood's did not cut as closely as was desired.

Certainty of Binding.—Messrs. Hornsby's machine was not noticed to miss binding any sheaves excepting in one instance, as already mentioned, and that by tangled string.

Mr. Wood's machine missed tying several times in the early part of the day, and Messrs. Howard's still oftener, to the extent in actual trial, however, of less than 1 per cent.

Knots.—All the knots were tied perfectly secure.

Uniformity in Size.—In forming sheaves, both in the wheat and barley fields, Messrs. Howard's machine made small sheaves occasionally, as did also Mr. Wood's machine, to a small extent.

By the scale of points there were none allotted to "Form of Sheaf," but it may be here remarked that Messrs. Hornsby's and Howard's were decidedly the best shaped, the former having a convex end or butt, while the latter were square. Mr. Wood's, in most cases, had a bevelled butt, and would be more difficult to stook. In size, however, they were more uniform than Messrs. Howard's.

Tightness.—All the sheaves from the same machine were equally tight, and the tightness could be readily controlled, leaving nothing to be desired in this respect, even the small sheaves above alluded to being well tied up.

Delivery.—Messrs. Howard's and Messrs. Hornsby's machines delivered their sheaves gently, Mr. Wood's ejected them with considerable velocity; but they always dropped on their butt end, and did not appear to shake out the grains.

Cost of String.—The cost of string is about 2s. an acre.

Shedding.—The machines were almost free from any shedding action. They were closely watched, and Messrs. Howard's alone showed a little shedding in the oat field, which might possibly have been avoided by a readjustment of the gathering reel.

Draught in Cutting.—The judges have awarded the same number of points to each machine, not having been able, after repeated tests by the dynamometer, to discover any material difference between the three machines. In the wheat field the dynamometer indicated an average draught of about 5⅛ cwt., 5½ cwt., and 5 cwt. for Messrs. Howard, Wood, and Hornsby respectively; whilst in the oat field the corresponding averages were 4⅛ cwt., 4⅜ cwt., and 4⅞ cwt. Taking the two crops of wheat and oats together, the draught of the three machines when at work is exactly alike. The judges expressed themselves satisfied with the capabilities of all the machines to do the work before them, and it was only after a very careful discussion on the points in detail that their decisions were arrived at. The sheafing and binding were done in a highly satisfactory manner, and in standing crop there is no doubt that all the machines can do such work as to warrant the judges in recommending them for general use. For parts of Scotland where there is usually much grass in the crops, a quicker speed in the knife might be desirable, and the weight and draught of the machines should, if possible, be further reduced.

The number of points awarded to each machine is as follows :—

	Maximum No. of Points.	Messrs. Hornsby.	Mr. Wood.	Messrs. Howard.
1. Mechanical construction : 300 points divided as follows :—				
Durability, . . .	30	25	20	23
Ease of adjustment, . .	40	33	30	30
Access to bearings for oiling,	30	25	25	25
Facility for repairs, . .	50	40	38	40
Ease of management, .	50	40	40	40
Weight, ...	30	20	18	16
Simplicity and draught out of work, ...	50	35	30	28
Price, ...	20	15	15	15
	—300	—233	—216	—217
2. Cutting, closeness, cleanness, and evenness of cut, . .	200	180	170	160
3. Binding : 200 points divided as follows :—				
Certainty of binding, . .	50	45	38	33
Security of knot tied, .	50	50	50	50
Uniformity in size of sheaf,	50	45	40	40
Tightness of sheaf, . .	50	50	50	50
	—200	—190	—178	—173
4. Delivery of sheaf, . . .	50	40	35	35
5. Cost of string per acre, . .	20	15	15	15
6. Freedom from shedding, .	80	75	75	70
7. Draught in cutting per foot breadth, ...	150	100	100	100
	1000	833	789	770

The judges, therefore, awarded the prizes as follows :—

1st Prize, £100, R. Hornsby & Sons (Limited), Grantham.
2nd „ £50, W. A. Wood, London.
3rd „ £25, J. & F. Howard, Bedford.

Upon the whole, the judges consider the trial a favourable one. They had certainly the advantage of seeing the machines at work in the hands of the engineers who constructed them, and, consequently, managed in the best possible manner. The sheafing and binding of all the three reapers were far superior to the same work now done by hand labour, and is of itself a great advance in agricultural machinery. The disadvantages for this country are the price (£60), which is large for farmers generally, and the complication of parts, which renders the machines heavy and more difficult to work, while the damp climate and grassy undergrowth which prevail in Scotland would cause more breakage than in the ordinary reaper. At the same time, farm servants are now generally well acquainted with machinery, and the most intelligent amongst them should be quite able to work these machines advantageously.

THOS. MYLNE, *Chairman.*
JAMES BIGGAR.
JOHN FINDLAY.
J. SHAW.
WILSON HARTNELL.

SECOND REPORT BY SPECIAL COMMITTEE ON "LOUPING-ILL" AND "BRAXY."

PROFESSOR WILLIAMS' report is herewith appended.

Mr. Brotherston made several visits during the season, both with Professor Williams and alone, to infected farms in Dumfriesshire, Roxburghshire, and Selkirkshire. His report contains nothing of any special interest, except that in most cases he found much less withered grass in spring than usual, owing—(1) to the growth of the pastures of 1881 having been below the average, and (2) from the mildness of the winter, sheep were able to feed on the grasses all through. As a rule, there were also fewer ticks, and a smaller number of cases of "louping-ill;" in fact, in his opinion, "all the researches of the past seasons tend in the same direction, and help to confirm former experiences. Keeping the pastures bare (by whatever means) especially by keeping extra stock, and giving them extra feeding, is certainly of great benefit, as it enriches and improves the pastures, and also limits the amount of disease, particularly 'louping-ill.' Indeed, the prevalence of 'louping-ill' is in proportion to the quantity of old withered grasses left from the previous year's growth."

With regard to Professor Williams's report—

1. The feeding experiment was disappointing, but it cannot be held to be entirely conclusive, as the grasses were cut in the spring, and the conditions were therefore unnatural. If the sheep had been penned on some ground on which a quantity of the rank suspicious grasses were growing, the result might have been different. It was fully intended to have carried out such an experiment, and arrangements had been made for this purpose with Mr. Oliver, Howpasley, but in consequence of there being so little disease this last season, it was deferred.

2. That there may be ticks without "louping-ill" is confirmed

by Mr. Brotherston, who visited Kirknewton Tors, near Wooler, in Northumberland, where there are ticks, but no such disease. The ticks are supposed to have been introduced a good many years ago, when a former tenant brought some sheep from Shankend. The absence of the disease is probably owing to there being fewer of the coarse grasses and the ground pretty bare and rocky.

Professor Robertson, Royal Veterinary College, also told Mr. Brotherston he had heard there were ticks in Cornwall, but no "louping-ill." He subsequently wrote that his information was on the authority of one on whose powers of observation he could thoroughly rely, who stated there were both *Ixodes marginatus* and *I. ricinus*, and that the pastures were uplands of rough grasses, including both *Nardus stricta* and *Aira cæspitosus*, and a good deal of heath of various kinds.

3. On the other hand, it is alleged by several farmers that they have "louping-ill" without ticks. There has not yet been an opportunity of testing these cases, and it is possible they may turn out on investigation not to be true "louping-ill"; but they leave room for a doubt whether it is as yet conclusively proved that the disease cannot exist without the agency or existence of ticks.

4. Of the purely scientific portion of Professor Williams's report, your Committee would wish to speak with all caution, but considering the very delicate and difficult nature of such an investigation, and by means of cultivations, it would be highly satisfactory, and in this Professor Williams readily concurs, that his experiments should be corroborated by other observers, and also that the life history of the tick should be fully worked out.

5. That getting rid of excessive and rank vegetation eradicates the disease, and that Mr. Brotherston was correct in his surmise that the evil lay in such rankness, there seems abundant evidence to show, so that while your Committee hesitates to accept Professor Williams's report in its entirety, they are quite at one as to the remedial measures to be adopted, which naturally fall into two classes—(1) direct improvement of hill pastures, and (2) indirect improvement by keeping down rank and excessive vegetation.

1. *Direct Improvement of Hill Pastures.*

There is a general concurrence of evidence that the land most to be dreaded is dry fogged-up pasture, and benty bog.

Burning.—The best mode of eradicating the dry moss or fog will be by thorough burning down to the roots.

As heathery ground is by no means exempt from "louping-ill," greater attention should in many places be paid to the systematic burning of heather, either in patches or stripes, and in this way *Nardus stricta* (wire bent), which seems to be invariably found in profusion on land liable to "louping-ill," and which consequently becomes one of the most suspicious of the coarse grasses, would also be, at any rate, partially kept down.

Bent should also be either burnt or cut for winter hay, for which it is well adapted, or kept down by cattle.

Draining.—There are many acres on almost every hill farm of white grassy land that are at present constantly wet and sour, and full of the rankest vegetation that could be improved, and turned into good sound pasture, if more attention was paid to surface draining, but still better to under draining with tiles.

Top-dressing.—Several cases are within the knowledge of the Committee, in which great benefit has been derived from top-dressing either with lime, gas lime, or salt.

Mr. Jardine, Larriston, the late Mr. Grieve, Skelfhill, Mr. Linton, Mount Benger, have all used lime with good effect. Mr. Grieve also laid on a good deal of gas lime at Skelfhill.

Mr. Henry Thomson, V.S., Aspatria, has during the last two years been vigorously reminding agriculturists of the great advantage of salt, especially as top-dressing, and considers it a specific for several diseases, including red water in cattle, and stomach staggers or ergot (which he considers identical with louping-ill) in sheep, and alluded to Mr. J. Harker, tenant of Millom Park, Cumberland. Mr. Harker writes that "this is an old deer park, with very old rough grass;" and from his description there would appear to be ticks also; he tried a dressing of salt, and this year considerably reduced his death-rate both of cattle and sheep.

Mr. Gideon Pott of Dod, Knowesouth, also writes strongly in favour of salt, and that on grass land which has a tendency to grow coarse he has found a top-dressing of 4 to 5 per cwt. per acre of salt have a wonderful effect in causing it to be eaten well down.

Mr. G. B. Todrick, Woolwell, Devonshire, on whose hill land there would appear to be both louping-ill and ticks, writes that he found great benefit last season from putting his sheep on land dressed with lime, but that next season he intends to try salt.

While all are agreed as to the beneficial effects of salt, and that it should be within easy access of stock, it is to be feared there are but few hill farmers who carry it into practice, and yet nothing can be easier than to provide, at a very small cost, a supply of rock salt either in troughs or placed in "sheep licks."

Irrigation.—Mr. W. Oliver, Howpasley, has been trying an interesting experiment in irrigation for the last three years. By careful levelling, he very ingeniously led water for about half a mile, and in this way was enabled to irrigate a considerable slope of a hill-side; he considers that he has so much improved the grasses and got rid of fog, that he is now extending his irrigation to some adjoining ground.

2. *Indirect Improvement by keeping down excessive and rank Vegetation.*

In spite of a strong feeling to the contrary on the part of many hill farmers, your Committee has received ample evidence to show that one of the most effectual modes of keeping pastures from getting too coarse is by *putting on cattle along with sheep.*

In an interesting article on this subject in the Society's *Transactions* for 1881, written by Mr. Duncan Clerk, Oban, he quotes the opinion of the Rev. Dr. Singer of Dumfriesshire, who as long ago as 1803–7, wrote—" . . . . . It is well known that a mixture of cattle, occasionally introduced into sheep pastures, consume the rank grasses, and render the pastures more wholesome;" and Mr. Clerk, in the course of his article, follows this up by enumerating several coarse grasses which are readily eaten by cattle before they become too rank. *E.g.*,

Juncaceæ (rushes).

Juncus squarrosus (heath rush or stool bent)—" Sheep do not appear to relish it; cattle however are very fond of it . . . . . It would be true economy to send young cattle to eat it in its young and succulent state, for once it approaches maturity no animal will eat it."

Juncus articulatus (spret or jointed rush).—" Making a right use of this strong and freshly growing grass deserves more consideration than it has yet received. In the beginning of summer it is soft and juicy, and cattle eat it greedily. If it be regularly cropped by them, some finer grasses grow among it, which afford good feeding for sheep; but these will not touch the spret itself after it is 2 or 3 inches long; and by the month of July, or probably the middle of June, it becomes so strong that even black cattle are indifferent to it, ... while in winter it shrivels and gathers into close tufts, which during the following spring and early summer cover the new crop so as to protect it effectually from both sheep and cattle."

Of the *Cyperaceæ* (sedges) Mr. Clerk writes:—" *Scirpus cæspitosus* (deer's-hair or club rush), no favourite with sheep, but which in May and June affords excellent pasture to young cattle. . . . . Towards the middle of July it becomes dry and withered at the top, but if kept well cropped it yields considerable nourishment throughout autumn, and in severe winters is greedily eaten by sheep as well as by cattle. Large extents of it are found on many hills, and these will unquestionably pasture black cattle, without diminishing the supplies of the sheep,—in reality, it increases them considerably. The same remarks apply to *Carex binervis* and others of its class."

Of the *Gramineæ*, or grasses proper, your Committee would note *Nardus stricta* (mat-grass or wire bent), which Mr. F. N. Menzies remarks cattle will eat readily before it gets too strong.

Your Committee would further point out that all the above, with the addition of *Eriophorum vaginatum* (hare's-tail cotton grass, or sheathing cottonsedge) and *Carex panicea* and *glauca*, were amongst those pointed out by Mr. Brotherston in the report of this Committee for last year, as being either very liable to be ergotised, or in early spring with the leaves of former seasons covered with minute fungi or smut.

In addition to Mr. Nichol, Newburgh, now of Crosslee, so prominently alluded to by Professor Williams, as well as several of those already mentioned, other cases have come under the notice of the Committee, in which louping-ill has disappeared under such management, *e.g.*, Mr. William Elliot, now of Wolfehopelee, states that when he herded the neighbouring farm of Wauchope they quite got rid of the disease by putting on a mixture of cattle with the sheep, and having plenty of salt licks. On two farms near Bowhill, in the hands of the Duke of Buccleuch, the disease has been almost entirely got rid of. At Oakwood Mill, by tile-draining, liming, and putting on cattle with sheep. On Newark Hill a few cattle are put out, and attention paid to the open drains. Two patches of about 10 acres each were tile drained many years ago, and on these the grasses are much finer and sweeter. Very few ticks are now to be found on either hill.

Your Committee believes it to be a fact, and if so, it is well worth noting, that louping-ill or trembling was unknown in the Highlands till the black cattle were removed to make room for sheep.

Two main objections will no doubt be made by many hill farmers and shepherds to putting on cattle along with sheep,—first, that they "champ" and "poach" the land too much, and damage drains; and second, that if the pastures were eaten down too close there would not be sufficient winter or spring "keep" for sheep.

There is no doubt something to be said in favour of both these objections, but the most grassy farms are as a rule most liable to the disease, and keep fewer sheep in proportion to the acreage; and there are many portions of such land that would be most worth improving by under draining and turning into good sound pasture, whereas at present there are many acres that from excessive rankness are never looked at, and are consequently wasted.

It must further be borne in mind that it is a modified use of the above-named courses, adapted to each case, that is recommended; for instance, it would be folly to overdo draining, and to get rid altogether of the variety of grasses so essential to hill grazing, or to eradicate the spret or others of the rush or sedge family, which are amongst the earliest in the spring, but rather to keep them within bounds, and by having them eaten over, prevent the accumulation of withered tufts from covering up the young crop, ensuring thereby the sheep getting the benefit of it *earlier* in the spring, and without the risk of injury from eating the withered tufts in their search for young shoots.

There are very few hill farms on which sheep are wintered where a certain amount of natural meadow or bent hay cannot be obtained for winter use, to be even supplemented in extreme cases by corn, either oats, Indian corn, or locust beans; and surely it is better in long and continued cases of storm to give a supply of wholesome warmth-producing food,as being more likely to secure a crop both of lambs and wool, than to allow stock to become emaciated, and with nothing on which to eke out a wretched existence beyond an excess of rank, unwholesome and innutritious vegetation. Under such management, it seems hardly to be expected but that there must be a high death-rate.

The winter management of hill sheep is a subject on which a great deal might be written, and is beyond the scope of this report.

Your Committee is further well aware that there is a strong and widespread feeling against hand feeding; at the same time, it is in possession of sufficient information to show that the practice can be resorted to with success, and, under proper management, without that injury to or weakening of the constitution so frequently attributed to it. Besides Mr. Nichol, Crosslee, Mr. Elliot, Blackhaugh, who has eradicated both louping-ill and ticks from his farm, has regularly for several years given his sheep from ½ to ¾ lb. of oats daily from the beginning of March, for about seven weeks, with great success, and with hardly any death either in old or young sheep.

The oats, he says, keep them in good spirits, and enable them to give more milk. The lambs have all these years been beyond expectation, and *have paid well.*

Though not in the habit of giving corn regularly, Mr. Pott of Knowesouth, Mr. F. N. Menzies, Lord Arthur Cecil, Mr. D. Pringle of Torquhan, Mr. Linton, Mount Benger, &c., have all done so occasionally and with success.

Even if ticks have no connection with louping-ill, it is evident the irritation and pain caused by them must have an injurious and weakening effect on stock. Your Committee, therefore, considers it highly expedient to show how, with some perseverance, Mr. Elliot, Blackhaugh, has entirely got rid of these parasites.

He still adheres to the old plan of "udder-locking," and seeing that this practice tends more than any other, as pointed out by Professor Williams in last year's report, to prevent death in lambs, from impaction of wool in the stomach, it seems much to be regretted that it has so much gone out of fashion. At the time, then, of "udder-locking," about the middle of April, each sheep has a mixture, rubbed in with a common shoe-brush, wherever it is bare of wool and round the roots of the udder, and this process is again repeated both with ewes and lambs at the time the lambs are cut.

By persevering with this plan for four years the ticks were quite got rid of, and not one has been seen for the last eight years.

The mixture used by Mr. Elliot was 2 pints Archangel tar, 2 pints train oil, 1 bottle spirits of tar, boiled together for a few minutes.

In short, while there appears to be no specific or universal panacea, your Committee believes that by the modified adoption to suit each case, of one or more, or even of all the courses specified, there can be but few hill farms on which, with energy, tempered by discretion, the death-rate from "louping-ill" or "trembling," cannot be reduced to a minimum.

BRAXY.

Your Committee regrets that it is not as yet in a position to make any further report on Braxy. Professor Williams has had but few opportunities since last report of seeing any cases, as, although advertisements have been inserted, asking that he might be communicated with, he has, up to this time, only received three applications.

REPORT BY PROFESSOR WILLIAMS.

LOUPING-ILL OR TREMBLING: *Chorea Paralytica Ovis*.

In the above terms is included a disease which every year entails an enormous loss amongst hill sheep, both black and white-faced, particularly in Scotland.

The term "louping-ill," supposed to be derived from *hloupa*, an old Scandinavian term for "a staggering gait," as applied to the disease, is general in some parts of Scotland, whilst in others it is known by the name of "trembling." In order to give the disease a scientific name, I have called it *Chorea paralytica ovis* —trembling paralysis of the sheep. It seems to prevail more in the Silurian hill districts of Scotland, and extends from the Hebrides to the southern extremity of Dumfriesshire, being equally prevalent in the district of Langholm as in the Isle of Skye. There is this difference, however, namely, in the southern parts it rarely occurs to any extent but during the early summer months, commencing about the middle of April, and disappearing before the end of June; whereas in Skye there are two annual outbreaks,—one in early summer, and another in autumn, commencing at the end of August and terminating in a month or six weeks.

It is stated that it effects, but to a slight extent, cattle, horses, and pigs. I have seen well-marked cases in horned cattle, but never in horses and swine.

Symptoms.—The symptoms, as observed during my investigations in 1881 and 1882, were as follows:—

Case No. 1, May 19, Langholm District.—A three-year-old ewe was seized on the 18th, just before giving birth to a dead lamb. When seen on the 19th she was standing with head erect and brilliant eye, the upper muscles of the neck spasmodically contracted, causing the nose to be protruded as in tetanus. When made to move, she did so very stiffly and automatically, the limbs being lifted very high, and the feet planted on the ground in a peculiar jerky manner, like a horse with stringhalt. There were tonic or persistent spasms of the muscles of the loins, back, and neck, and clonic or intermitting and irregular spasms of the other muscles, particularly those of the limbs; the breathing was very jerky, quick, and irregular, being from fifty to sixty per minute when quiet; pulse 102, and temperature 105·5° F.

On being excited the ewe fell prostrate on the belly and chest, and lay with head and neck extended; on being raised, walked away trembling violently, the trembling being due to alternate contraction and relaxation of the muscles.

On examining the skin three kinds of ticks were found, but they were not very numerous.

She was killed, and on making a *post-mortem* examination of this ewe, nothing very special was discovered; the flesh was pale, and the carcase thin, but there seemed to be no abnormality of the cord or spinal canal, beyond a slight increase of the spinal fluid. There was no jelly-like exudate on the cord, nor any congestion of the cord, or of the membranes.

No. 2.—Another ewe was recovering. She had trembled for a day, then became paralysed, and went down and lay three days, but was then up and walking about, but in an unsteady, semi-paralysed manner.

May 24, 1881.—No. 3.—This case was seen by my son Mr. William Owen Williams, and was in the Peebles district. Lamb about four weeks old; was in a tetanic fit; ground its teeth; rapid squinting movements of the eyes; the spasm lasted from one to two minutes; it then got up seemingly well, though dragging its hind legs; had been ill two days. Temperature 104° F.; pulse 100; respiration 40. On dissection, nothing abnormal was found beyond a jelly-like exudate in the spinal canal.

No. 4.—Ewe lamb on same farm, about three weeks old; temperature 103·8° F.; breathing very quickly; pulse too feeble to make out exactly; lying prostrate, completely paralysed. When pricked with a pin showed increased sensibility (hyperasthæsia), the reflex movements being very violent. This lamb had been ill a week, and not able to suck for the last three days. Had her killed, and found a jelly-like exudate in spinal canal. The owner of these sheep had lost four score of lambs and one score of ewes since the 1st of May, and he also lost annually from five to seven per score of hoggs from braxy.

The herd stated the sheep had a tendency to eat dirt when the disease began, and that it was always worse in bleak weather.

No. 5.—June 8, Sanquhar district.—Ewe hogg; had been ill four days; was not observed to tremble, but found down, paralysed. Was in good condition; in fact almost fat. Lay quietly on the right side; eyes open, no dilatation of the pupils, nor any squint. When suddenly approached, or otherwise disturbed, was very frightened, and struggled violently. When hind leg was lifted up and allowed to fall there was no attempt at motion, but when the fore leg was lifted in the same way there was a to-and-fro motion before reaching the ground.

When raised, and held up by hand, it could move its fore limbs pretty freely, and could stand and bear weight upon them; but the hind ones remained extended backwards, completely paralysed, and the muscles of the hind quarter were clonically convulsed.

Sensibility was diminished in the hind limbs, but there seemed to be some degree of hyperasthæsia in the fore ones, as these moved very rapidly and violently when pricked. The sensibility of the trunk seemed to be normal.

The temperature was 105·5° F., pulse 106, and respirations when not disturbed, 30; but when excited the breathing became very rapid, jerky, and convulsive. The *post-mortem* examination revealed nothing very particular in the spinal canal, brain, nor in any other organ. The flesh was not at all pale or anæmic, as in the majority of the cases examined, and fat was abundant and very healthy looking.

During 1881 about three score of sheep and lambs were examined after death, and about one-third of these were considered to have had "louping-ill," whilst others were found to have had—(1) "joint ill" (suppurative arthritis); (2) anæmia, from pure starvation; (3) impaction of the stomach with wool in young lambs.

In autumn the Isle of Skye was visited, but, unfortunately, only one case was discovered; it was, however, a well-marked one of "louping-ill," and although it presented no characteristic condition on being examined after death, it gave results which were in unison with others already observed, namely, a special organism was cultivated from the spinal fluid.

In 1882 the spring and early summer seasons were very mild, young grass was abundant, and "louping-ill" was not nearly so prevalent; but in May information was received that the disease was prevailing, and the Hawick district was visited, and cases observed and examined. The symptoms during life, and the *post-mortem* appearances, were like those already referred to. In all of the cases the passage of fæcal matter and of urine was normal until the paralysis became complete, when both urine and fæces were passed involuntarily. In many the appetite was moderately good even when paralysis was complete, as they would nibble the grass within their reach with some degree of avidity, and young lambs would take milk out of the bottle freely; indeed, it was not until exhaustion became extreme that the appetite failed, and always up to the last consciousness, as evinced by moving of the ears when any sounds were made, and closure of the eyes when any object, such as the finger, was brought suddenly near them.

In one lamb, sent in from Dumfriesshire in 1882, there was a downward squint in both eyes even when in repose, but in others there was no squinting unless under excitement, when, as in the first case described, there was often a convulsive motion in both eyes.

We were informed that many sheep seemingly in good health often make a jump and fall down, some dead, some completely paralysed, when suddenly frightened or approached by a dog, and that there were very often no other indications of the disease.

Causes.

These are ascribed to a variety of external circumstances, such as soil, pasture, geological formation, altitude, weather, and the influence of ticks.

1. *Influence of Pasture, Geological Formation, and Altitude.*—Mr. Brotherston, Kelso, who has made an extensive examination of the geological formation of louping-ill districts, has come to the conclusion that it is found on very different soils, geological formations, altitudes,—close to the sea, as in Skye, and on soils and formations so far apart as the Lower Silurian,

the Upper Silurian, the Old Red Sandstone, through the Carboniferous to the Basalt of the Tertiary period, and that it existed equally upon all these, provided old grasses were allowed to remain on the ground. (By old grasses is meant the growths of the last and previous years.)

Mr. Brotherston was the first to promulgate the opinion that the cause of the disease was contained in the withered grasses, as these grasses were extensively covered with a variety of micro-fungi; and that these fungi acted upon the animal body in a manner similar to that induced by ergot; that, in short, "louping-ill" was a species of ergotic intoxication or nervous excitement. This was a very reasonable conclusion, for, as before stated, the disease was not found unless portions of the ground were more or less thickly covered by grasses of last year's growth, all of which were covered with micro-fungi.

It was important to set this question at rest, and on 9th May 1882, four one-year-old sheep were obtained from a district in which "louping-ill was unknown, and were fed up to 15th day of June, or thirty-six days in all, upon these withered grasses, carefully collected by Mr. Brotherston in the Hawick district. After that six ewes and lambs were added to the number, and fed upon the same grasses, and remained quite free from disease. Later on, the grasses were mixed with ergots, but no effect was induced, beyond a slight loss of appetite and some degree of purging.

By introducing a small portion of fungous grass into a cultivation fluid, long thread-like filaments could be grown, but these differed from what is hereafter to be mentioned, and the above experiment almost conclusively proved that neither the grasses nor the micro-fungi are capable of directly inducing the disease.

Doubtless animals fed upon such poor food, particularly if compelled to range over the hills in search of it, are rendered feeble and incapable of resisting the influence of disease-exciting causes, and in consequence the mortality is thus rendered much greater than where the pastures are richer and more nutritious.

2. *The influence of the Weather.*—The minority of those acquainted with the disease hold the opinion that a sudden change of weather of any kind, whether from good to bad or from bad to good, is sufficient of itself to induce the disease; whilst others maintain that it appears only during the prevalence of cold east winds.

These opinions are entitled to some consideration, as it is an actual fact that the mortality is very much greater after a sudden change, particularly—and in every instance that came under observation during the investigation—a change from warm to cold and inclement weather.

But neither change of weather nor exposure to its inclemency are of themselves sufficient to induce the disease, nor does the latter in any of its phases simulate an ailment brought about by climatic influences; and the only conclusion that can be deduced from the above premises is, that inclement weather, by its debilitating influences, predispose to disease, and causes many animals to succumb to what otherwise might have passed off without very grave consequences.

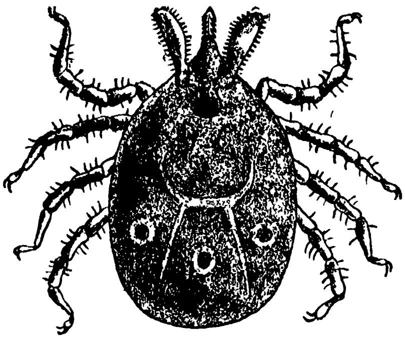
One flockmaster observed that he believed the great majority of the sheep in an infected district had the disease once in their lives in greater or less severity during the season; that if the food were good and the weather favourable, but few became seriously ill, and fewer died; but if the weather became suddenly cold or wet, the disease was able to make a deeper impression upon the animal body, and many then succumbed; and further, if the disease were due to the weather, why was it confined to certain districts, whilst in others equally cold and exposed it was entirely unknown?

Being satisfied that the grasses, micro-fungi, ergot, geological formations and weather, were insufficient to cause the disease, one other probable source of it remained to be considered, namely—

3. *The influence of Ticks* (*Ixodes*).—The belief is general amongst all acquainted with louping-ill that it is closely allied to ticks; the majority of farmers, indeed, believing that the parasites, by fixing themselves in the skin and sucking the blood, cause such extensive irritation, pain, and weakness, that the animals perish from these causes, and that the convulsive spasms and paralysis are merely symptoms of irritation and debility. A very brief acquaintance with the disease, however, compelled the author to conclude that, no matter how closely allied the tick and the disease were, irritation and loss of blood had little or no connection with the disease under consideration; for in many instances but few of the parasites were found on some of the diseased sheep, whilst many healthy ones were swarming with them, and seemingly feeling but little discomfort. It was, however, noticed that when they were very numerous on lambs, such lambs presented the disease in an aggravated form, as if the dose of the dsiease-inducing material had been a strong one. The belief in the influence of the tick, or its close connection with the disease, being so general, it was necessary to consider this point very carefully, with the view of determining if any relationship existed between the parasite and the disease. The result of observations on this point was confirmatory of the popular idea; for it was found—(1) that where louping-ill existed there the tick was sure to be; (2) that where the parasites were absent there was no louping-ill; (3)

that the appearance of the parasites on the sheep in April and early summer was concomitant with the annual outbreak of the disease; (4) that in Skye, where it is said the disease appears both in spring and autumn, it was seen by the Commission, as already stated, in autumn; and what was said about the tick being there in autumn was found to be true.

Ticks are occasionally found on land free from louping-ill. From this it must be concluded that the parasites are the conveyors or inoculators of a poison existing in the herbage or land; for by improvement of the land by ploughing and liming, by artificially feeding the sheep, and destroying or otherwise disposing of old grasses—the natural covers of the tick, as will be shown hereafter—louping-ill has been entirely eradicated.



The Tick.

The tick is a true blood-sucking parasite, belonging to the family *Ixodidæ*, the class *Arachnidæ*, and order *Acarinæ*. The mouth of the tick is provided with a serrated beak or rostrum, which enables it to pierce the skin, and retain its hold very firmly, and almost without effort, as the barbs or serrations point backwards.

The species are very numerous, but the best known are the *Ixodes ricinus*, dog tick, the *Ixodes reduvius* and *Ixodes plumbens*, sheep and cattle tick. Those found during the investigation were recognised by Mr. Moore, Bethnal Green Museum, as *Ixodes ricinus erinaceus*, and *marginatus*.

Ticks are said by Professor Simonds (see *Journal of Royal Agricultural Society*, vol. i. 1865) to exist in most localities, and that they specially abound in light sandy and warm districts, where brushwood, thickets, and plantations prevail. But during this investigation we found them upon every variety of soil, and at different altitudes,—close to the sea-level in Skye, and at a height of 2000 feet in the inland districts; in fact, they will be found as high as sheep will go, provided always old grasses are abundant to afford cover, as they are thus protected from injury, and are left at comparative rest during the periods they are not obtaining blood from the animals which they attack. Prompted by hunger, they quit their hiding-places, and attack any animal which may come in their way, by plunging their beaks or sucking proboscides deeply into the skin, particularly about the face, root of ears, lower parts of breast, between the thighs, in fact into those parts of the skin covered more with fine hair than wool.

Thus fixed, they will hang for days together sucking the blood, until their bodies become distended to eight or ten times their original size, and they do not seem to quit their hold until they die, the eggs remaining dormant until next spring, and, shortly after they are hatched, they most probably attack the sheep, and after they once bite remain firmly fixed in the skin.

It was a noticeable fact that when dead or dying sheep were examined, the ticks were found already dead, or in a dying condition, in almost every instance of louping-ill.

Rabbits, ferrets, stoats, weasels, and more rarely hares, are attacked by ticks, but there are no instances recorded of these animals becoming infected by louping-ill. This is probably due to these hosts proving unsuitable habitats for the development of the organism, inducing "louping-ill," but horses are said to present symptoms of the disease during the louping-ill season.

When they first leave the ground to attack animals they are very small, sometimes no larger than a pin's head, and when very numerous make the part quite black by their numbers, and they adhere so closely that scraping them off will tear up the skin.

In South America, where the parasite is called the *Carpato*, it is stated that many thousand head of cattle are annually carried off, and frequently a scarcity is thus caused (*Microscopical Transactions*, vol. i. p. 88).

Being satisfied that the parasites had a close connection with the disease (the proofs that they were co-existent upon certain lands, and simultaneous in their appearance, being overwhelming), but failing to see that they caused grave disease and death by inducing irritation and loss of blood to any great extent, it was necessary to discover if any organism existed in sheep dead from louping-ill, and if so, to trace its source of origin, indeed to demonstrate if such an organism was common to the tick and to animals affected with louping-ill. This was a matter of some difficulty, as in the majority of the animals examined after death no really characteristic lesions could be detected.

In many, all parts of the body presented the appearances of health, death having been evidently due to intense nervous irritation.

In some, of course, it will be understood that there were signs of other diseases, but these in reality had no connection with the animal's death, and we are now referring to louping-ill pure and simple. In some instances there is a jelly-like formation within the spinal canal, external to the dura mater, sometimes extending in a more or less uniform layer from one end of the canal to the other, but rarely extending within the cranium. It is sometimes in patches here and there, particularly embracing the roots of the spinal nerves; generally there is a large patch in the lumbar region, then smaller ones scattered along the dorsal region; often a large patch at or about the junction of the cervical and dorsal, and very frequently a large and much redder patch immediately posterior to the foramen magnum, or entrance into the brain cavity. This jelly is seen both in lambs and in aged sheep in great perfection. It was first seen in sheep by me at Langholm on 20th May 1881, in a four-year old ewe. I have also seen it in oxen, as well as in sheep and lambs. It is, however, not constant, even in cases that have been unwell for several days, whilst in others that have been down three or four days it is abundant. I make particular reference to this jelly, as some to whom I have shown it have asserted that it has no connection with the disease, that in fact it is a myxomatous condition of the fat surrounding the spinal cord,—a condition, they say, not inconsistent with health in young animals; and that what I considered mycelia, the development of which within the body being supposed to be an impossibility, were nothing more than capillaries, and the spores blood-corpuscles.

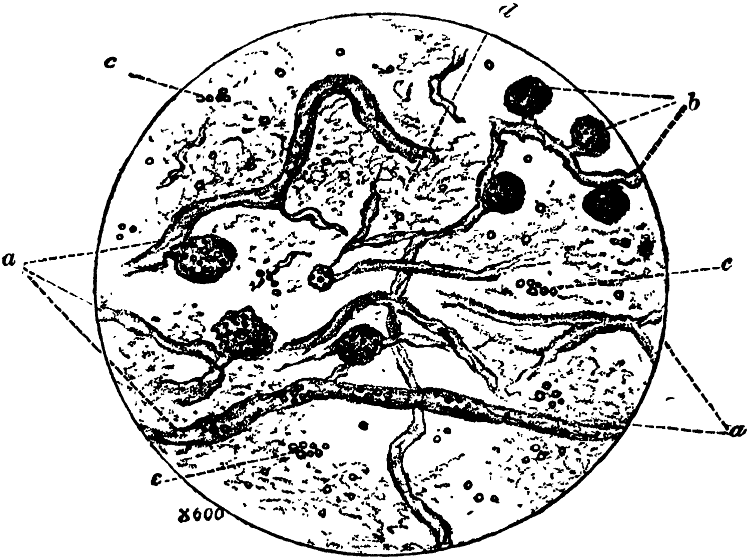
This jelly is a slimy tenacious substance, of a straw colour, and, as seen by the naked eye, lying external to the dura mater, and when examined microscopically is found to contain an organism, the *Bacillum choræ ovis*, presenting the appearances seen in the drawings.

Figs. 1 and 2 have reference to the appearance seen in fresh specimens of this jelly under powers of 600 or 700 diameters, when the most characteristic structures are those to which I have applied the term mycelia, and which, as stated above, were considered to be capillaries by some *savants* to whom I had shown the specimens. At *a*, in figs. 1 and 2, are seen these filaments in various forms; they appear to consist of an extremely delicate limiting membrane (appearing better defined in filaments of medium size than in the larger ones), of highly refractive semi-fluid contents, and at intervals enclosed masses of spores of a still higher refractive power than the fluid in which they lie.

These spore masses are seen at *b* in both figures, and at *c* there are a few spores outside the filaments. Fig. 2 shows the appearance I have most commonly observed; fig. 1 represents

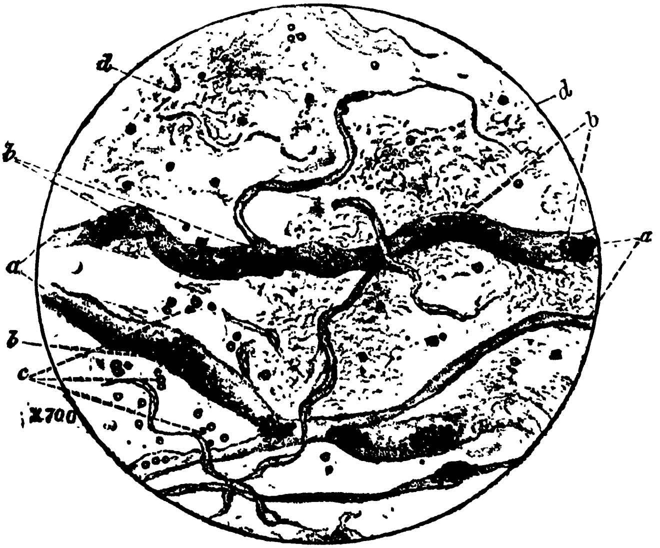
FIGS. 1 AND 2.—MICROSCOPIC VIEWS OF GELATINOUS MATTER FROM SPINAL CANAL CONTAINING THE BACILLUM CHORÆ OVIS IN SOME OF ITS STAGES.

FIG. 1.



a a, Spore-bearing filaments. *b*, Peculiar globular masses of spores.
c c, Free spores. *d*, Micrococci.

FIG. 2.



a a, Filaments. *b*, *b*, The spore masses in filaments.
c c, Free spores *d*, Micrococci.

a less common appearance, where they resemble berries upon short stalks.

As arguments against those mycelia or filaments being capillaries, I would point to their peculiarity of branching, the minute size of many of these branches, their behaviour on staining; and further, that the contents, instead of being shrivelled blood-corpuscles, differ very much from such bodies in their uniformity of size, smoothness of outline, and high refractive power; but, finally, the appearance of identical filaments in fluids from cultivation of the blood and spinal fluids of sheep affected with this disease sets aside completely any possibility of their being capillaries.

The fresh spinal subarachnoid fluid obtained from spines in which the jelly or muxa is absent, when dried on a glass slide and stained with methyl-aniline, is seen to contain a considerable number of bodies, like those marked *a* in the drawings, and some epithelial scales, but no motile or rod-like bacteria or bacilli. When a minute drop of this clear and fresh spinal fluid is cultivated in mutton broth, even at the ordinary temperature of a room, or exposed to the sunlight in proper cultivation vessels, it gives rise to the following series of changes:—first, in about eighteen hours the fluid is seen to be more or less turbid, and if examined microscopically under a good light, and with power over 600 diameters, it will be seen to be crowded with extremely minute organisms of a cylindrical or club shape, with slightly rounded ends, these cylindrical rods being either free or attached in chains. Some of the rows are single, most are double, and a few are triple or even quadruple.

The single free rods or bacilli are motile, and, like most bacteria, stain readily with methyl-aniline violet, and when so stained are easily observed.

Fig. 3, drawn from a specimen procured from a cultivation in mutton broth of spinal fluid from an affected sheep, shows these rods free and in several states of attachment, as well as masses of zooglœa with bacilli embedded in it.

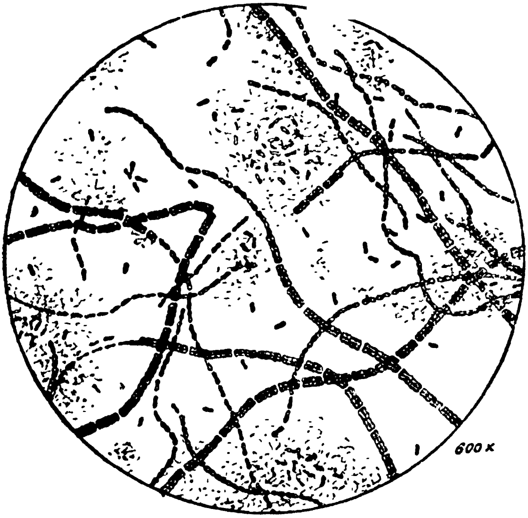
A few hours later, longer chains are developed, and rod-like bacteria or bacilli having active motion are very abundant, whilst at other points distinct mycelia or spore-bearing tubes identical with those seen in the glutinous matter from the cord are visible, and masses of zooglœa with micrococci are seen scattered throughout the field (figs. 4 and 5, *c*, *e*).

To gain an idea of the individual character of these rods, and also of their attachment in single or multiple chains, I refer the reader to figs. 5 and 6.

A free rod or bacterium, as at *d*, figs. 5 and 6, presents a somewhat cylindrical outline, slightly rounded at the extremities, with a bright line (due to refraction) running down the centre and slightly swollen out at either end. (The appearance of this line is less given by the drawing than are the other characters.) The middle part of each rod is a little constricted, but much less so than *Bacterium termo;* its length is about midway between that of *Bacterium termo* and of *Bacillum anthracis*, and the rounding of its ends is also intermediate between these two, but more nearly approaching the characters of the latter.

The character of the chains or rows of rods may be seen in figs. 3 to 6, the former under 600 diameters, showing the general appearance of single and double rows, the latter of double rows under a higher power (1200) and in various stages of detachment.

FIG. 3.—BACILLUM CHOREÆ OVIS.

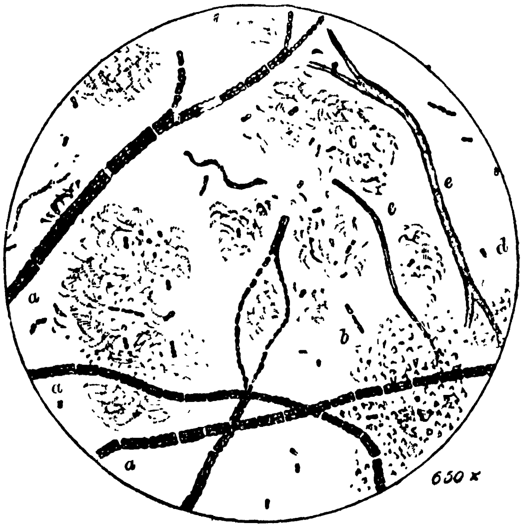


Cultivation from Spinal Fluid.

These chains present very much the appearance seen in many low forms of vegetable life, only differing in point of size. Fig. 3 shows that in the double rows, so long as the rods are in lateral contact, clear division lines mark the chains transversely at intervals corresponding to the lengths of two rods, and that also less distinct cross lines are visible midway between these, marking off each bundle, as it were, into four. The single chains often present here and there an occasional element in position alongside (see figs. 5 and 6). In all of the figures are to be seen masses of zooglœa with embedded bacteria, as well as many free bacteria in the intervals. In fig. 6 many of these seem to have been breaking up into *débris* (these are shown in fainter lines); indeed, it was noticed that by allowing putrefaction to take place the appearance of the *Bacterium termo* was always rapidly followed by this result, and finally by the total disappearance of the bacillum under consideration. Perhaps more interesting than the appearance of the rods in all the cultivation fluids, whether from the spinal fluid or from the blood, is the appearance of these filamentous tubes marked *e* in figs. 4 and 5, as proving the identity of the organisms seen in the jelly from the spinal canal, and those developed from cultivation of fluids from the affected animals, as well from the bodies to sheep ticks, as will be seen from what follows.

An examination of the blood alone gave no very satisfactory result. Here and there, however, spore-like bodies were seen; these, however, were neither numerous nor constant; but by inoculating mutton broth with a minute quantity of fresh blood a result was obtained, but not in all instances, exactly identical with that resulting from the cultivation of the spinal fluid. In the course of from twenty-four to thirty-six hours the cultivation fluid was seen to be more or less turbid, and on the microscopic examination of a stained specimen free bacilli were seen in great abundance; a few were also seen in rows. On the third or fourth day mycelia, with spores in their centre or covering their walls, became visible, as well as masses of zooglœa with numerous embedded bacilli and micrococci, as seen in fig. 4.

Fig. 4.—Bacillum Choreæ Ovis from Blood Cultivation.

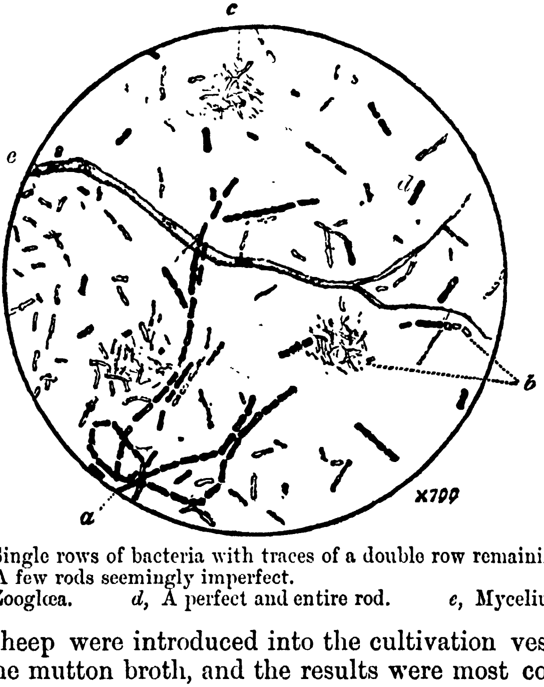


a, Rows of rods in groups of fours and sixes.
b, A few rods in a single row.
c, Mass of zooglœa with micrococci. *d*, A single rod.
e, Mycelium with spores.

The microscopic appearances of the jelly-like substance found in the spinal canal, and the development of the same mycelium, and spores with motile bacilli from the blood, &c., although not as yet clearing up entirely the life history of these organisms, showed that a new discovery had been made, and that the disease in question was due to the irritation of the nervous system through the spinal cord, in the fluids of which this organism seems to find a suitable nidus for complete development.

The experimental feeding of the sheep on fungoid grasses having given no result, the author had but one resource left by which he hoped to determine whether the tick conveyed the disease to the sheep or not, and for this purpose ticks from diseased sheep were introduced into the cultivation vessels containing the mutton broth, and the results were most conclusive. In a few days the fluid became turbid, and was found to contain numerous bacilli or rod-like bacteria, in no respect distinguishable from those got in the fluids from the diseased sheep; and further, that the peculiar filaments with spores in their interior were also seen (fig. 5, *e*).

Fig. 5.—Bacillum Choreæ Ovis.—Cultivations from Tick.



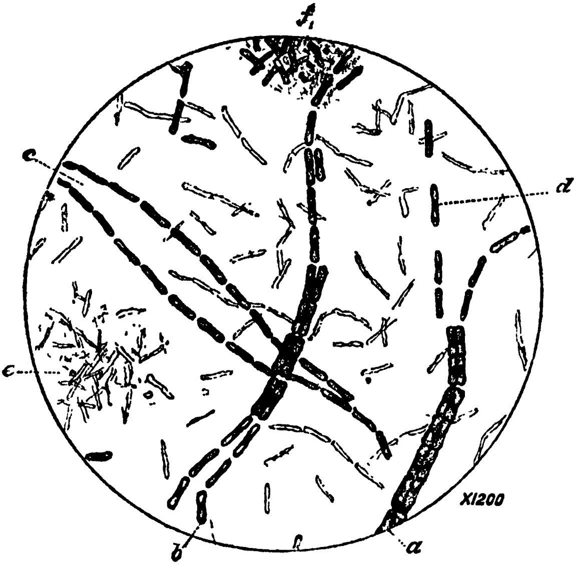
a, Single rows of bacteria with traces of a double row remaining.
b, A few rods seemingly imperfect.
c, Zooglœa. *d*, A perfect and entire rod. *e*, Mycelium.

The strawish-coloured mould which soon covered the ticks, when stained, dried, clarified with oil of cloves, and mounted in balsam, presented the appearances seen in figs. 5 and 6.

Now this proved nothing beyond the fact that the organism was in the tick; but whether the tick received it from the sheep, or the sheep from the tick, was a point yet to be determined, and for this purpose ticks were obtained from perfectly healthy sheep and treated in the same way, and the conclusion arrived at was that the organism was communicated by the tick from louping-ill districts to the sheep, for the same organism was found to be developed, but not quite so quickly, in the cultivation, as in that containing the tick from sheep suffering from louping-ill.

This last experiment, repeated over and over again, proved the fact that the ticks experimented with contained the spores of the organism, and were capable of infecting sheep; and that the reason that all sheep were not infected was probably the fact that many sheep were able to resist the invasion of the organism, or suffered so slightly that they were not observed to be ill.

FIG. 6.—BACILLUM CHOREÆ OVIS.—CULTIVATIONS FROM TICK.



a, Double row splitting into two single rows, which separate longitudinally.
b, Double row in another stage of division.
c, Two single rows lying nearly parallel. *d*, A single rod.
e, Zooglœa with disintegrating bacilli. *f*, Zooglœa with entire bacilli.

The infecting organism may be received in two ways,—firstly, by the infected tick fixing itself in the skin, thus directly inoculating the higher animal; secondly, by the ingestion of ticks—which in their earlier stages abound in the grasses—the organism gains access into the system, particularly if any portion of the mucous membrane of the digestive apparatus be abraded.

Many sheep even badly affected recover from louping-ill, and it is fair to conclude that the organism has but a transient effect upon many others; that, in fact, as is the case with other diseases, many are able to throw it off, and are most probably by this inoculation rendered proof in many or even the majority of instances against any further infection. This conclusion is borne out by a circumstance well known to flockmasters and shepherds, namely, that sheep removed from a district free from louping-ill are much more liable to take the disease than those reared in "louping-ill districts."

In order to complete the series of experiments, it was necessary to inoculate mutton broth with the blood and spinal fluid of healthy sheep; and this was repeatedly done, and in every instance with no result, the broth remaining perfectly clear and free from organisms at the time these sheets are going to press, or more than nine months after the healthy spinal fluid had been introduced into the mutton broth.

The Anti-Vivisection Act being a bar to the experimental inoculation of animals without a licence, and owing to the difficulty of obtaining a licence, it has been hitherto impossible to determine whether the disease can be inoculated from the tick, or directly conveyed from one sheep to another,—that, in fact, it is a truly infectious disease; and the problem must still remain unsolved until a future period. If found to be inoculable from the tick to sheep, or from one sheep to another, preventive inoculation with attenuated virus will then have to be considered.

An endeavour to cultivate from the jelly obtained from the spinal canal has not given such striking results, as mycelium has not been so far developed. Reasoning upon this fact, the author ventures a speculation that probably the disease is not directly communicable from one sheep to another, and that the organism (only fully developed into mycelia in some sheep—others, owing to debility of constitution, excessive irritation, or other causes, succumbing before the development of the muxa) has to enter the body of at least one other host, namely, the tick, and that this parasite alone is capable of infecting the higher animals.

It will be noticed that the mycelia or filaments and bacilli or rods differ in size, and to some this seems antagonistic to the view that it is a specific organism.

It must, however, be remembered that these different appearances are due to the varying ages of the growth, and that the organism seems only to arrive at maturity in the spinal canal, where, in the jelly sometimes there found, it may be seen in its highest development, namely, that of fructification.

The great question giving origin to these investigations is, What is the remedy for the disease? and the reply is, destroy the ticks and the disease is prevented, in fact exterminated.

Various remedies are recommended for the destruction of ticks, and some of these are simple and efficacious. They are not to be pulled off unless existing in small numbers, for by such means the rostrum will be left fixed in the skin, and may give rise to bad results. If they are cut asunder with a pair of scissors, they will immediately retract the sucking organ and fall off.

Sponging the skin with a decoction of tobacco, saturated with salt, is recommended by Professor Simonds, who also states that one ounce of creasote to four of linseed oil, rubbed in with the point of the finger around the place where the ticks are fixed, will be effectual for their removal. They are also quickly destroyed by touching them with the oil of turpentine, and are thus rendered easily detached by the slightest friction.

Dipping the sheep with any of the recognised sheep-dips will also destroy the ticks, but this procedure cannot be very conveniently effected at and about the lambing season; and if lambs were dipped, great care would have to be exercised that the dip be not too strong, or else the remedy might prove worse than the disease.

The great question, however, is, can ticks be destroyed and the disease prevented? and I think I am in a position to answer in the affirmative.

It must be borne in mind that, as already stated, ticks are only found where the last and previous year's grasses are rank and afford cover for the parasites, and the remedy for the prevention of the disease is to eat down if possible, cut, burn, or otherwise remove during the autumn all the long grasses of the previous summer's growth.

Mr. Brotherston, believing that the grasses themselves, infested with micro-fungi and ergots, are the cause of the disease, strongly recommended this method for the disposal of superfluous pasturage, which, if left on the ground, becomes of itself diseased, and is supposed by him to be capable of inducing disease in stock; and in answer to the question, how are the sheep to be kept alive when the pastures are thus made bare, has replied that the grasses must be subsidised with corn, roots, hay, &c., and that by thus returning something to the land, which is gradually but surely impoverished, the grasses will become of a better quality, and will continue to grow for a much longer period during the year than hitherto.

Putting aside the problem which is yet unsolved, namely, the possibility of the louping-ill organism having to pass one of its stages of existence as a micro-fungus upon some grass (such as the *Nardus stricta*, which is found in great abundance on the poor soil in such localities) before entering the body of the tick, or whether it is hereditary, as it were, in the body of some sheep ticks, leaving the pasture bare, and subsidising it with hay or corn, recommends itself to the careful consideration of all interested in sheep, for it is a fact placed beyond all doubt, that by rendering the pastures bare the covers and hatching-places of the ticks are thus destroyed. In confirmation of this conclusion, I take the liberty of giving the experience of an Ettrick sheep-farmer, Mr. Nichol, Crosslee and Newburgh on Ettrick, who was visited by Mr. Brotherston and myself on 24th June 1882.

Mr. Nichol stated that he entered the farm of Newburgh twelve years ago, and that the louping-ill was then very bad. Between Whitsunday term (May 26th) and August he lost 10 per cent. of his lambs—thirty-two out of sixteen score—besides several ewes. He thought the farm was not worth having. The parks were all in rough grass. Next year he bought some cattle, and far more the following year; ate, cut down, and even burned the old grasses; drained and limed the parks, using 6 tons of lime per acre to the light and 8 tons to the heavy land. He continued to eat, cut, and burn down the grasses as bare as he could, and both the "louping-ill" and the ticks became scarcer and scarcer. The third spring after he entered the farm it was very cold and sleety up to and after the "cutting" time. Ticks were very much scarcer than they had been before, and louping-ill was very much diminished with him, whilst on other farms it was, as might have been expected from the state of the weather, very bad. He thought, but wrongly, as he has now found out, that the wet, coarse weather was the cause of the scarcity of the ticks.

In six years both louping-ill and tick had both almost entirely disappeared—an odd one now and then—and he has had scarcely any since.

He has kept extra stock, both of cattle and sheep, during summer. The number of cattle kept has increased from forty to one hundred and twenty, which were kept during the summer of 1881. The cattle are sold about October, but about thirty head are kept on the hills during winter, part of them being tied at night. Last year Mr. Nichol stated—"You may believe the pastures were eaten to the bone." During our visit, however, we found that the grasses were more luxuriant and of much better quality than on any neighbouring land.

When he first entered the farm, the land kept twenty-three score of sheep; it now keeps thirty score, besides the extra cattle.

Mr. Nichol stated he had been a shepherd for forty years before becoming a farmer; that he never heard of artificial food being given to hill sheep until 1860. Since then, when the sheep have been unable to graze for frost and snow, he has fed artificially upon four different occasions, with half a pound of corn daily, when the hay was done, for from four to eight weeks, or until the grass came, and found the sheep to do well during the ensuing summer, and did not require any artificial feeding during the following winter, unless it was a bad one. When so fed the sheep came off the hill better in spring, although cattle had been on all winter.

Braxy still prevails from October to January.

Mr. Nichol has held the neighbouring farm, Crosslee, for one year; both louping-ill and tick are on it. He put seventy head of cattle on in the summer of last year (1881), but four of them were poisoned with some sheep-dip left on by the last tenant, so he became frightened and sent them to Newburgh. He has twenty-six on now, and intends to have more, and has no fear but that he will abolish both louping-ill and tick.

There is a strong prejudice amongst even the most enlightened sheep farmers and shepherds against all artificial feeding of hill sheep during winter, some even going so far as to object to give hay during the coarsest weather, when the ground is deeply covered with frozen snow, and the animals actually dying from the want of food, upon the ground that by being fed upon hay or corn the sheep are made soft and incapable of standing the vicissitudes of the weather. Mr. Nichol very quaintly remarked, "Those who can afford to let their sheep die, do so; but I cannot afford this, so give corn."

One farmer whom I know very well congratulated himself that his heavy loss had taken away all his weakly sheep, and he had now a good strong stock to breed from,—stock that would stand anything, even starvation.

One moment's rational consideration of this matter would open the eyes of even the most prejudiced, and convince them that starvation never leads to strength, but to the reverse condition, and that a strong healthy stock, although able to live through a hard winter without any food but what they can scrape up, are rendered weak and debilitated; and that the mortality amongst the ewes is enormous during the lambing season, that many dead lambs are brought forth, and that where both mother and offspring survive, the latter often dies from starvation, the ewe being unable to afford it its natural sustenance. It must also be borne in mind that exhaustion of soil, micro-fungi on grasses, ticks, poverty, and louping-ill are co-existent.

In conclusion, I would earnestly recommend all who may read these observations to consider carefully the suggestions laid down, to increase the number of their stock, and thus utilise that which, if left on the ground, becomes a source of mischief not only in itself, but by affording a cover and harbour for parasites, which I think have been proved to be the source of enormous losses.

With regard to the ked, *Melophagus ovis*, found upon all sheep, and having no connection with the disease under consideration, it was discovered that those removed from sheep suffering from louping-ill contained the germs of the organism, and that it could be cultivated as readily as that of the tick itself, whereas, when it was removed from sheep healthy and not upon louping-ill land, no results were obtained, although several experiments were made.

ADVANTAGES AND DISADVANTAGES OF BREEDING STOCK SHOWS.

By WILLIAM MACDONALD, Editor, *North British Agriculturist*, Edinburgh.

SUCH is the title of a paper which the Committee of the Highland and Agricultural Society on Publications invited me to write for the *Transactions* of that venerable and influential institution. Though literally the paper is limited to breeding stock, it is presumed there will be no objections to fat shows being also embraced. Accordingly, with the Committee's and the Editor's permission, it is intended to include fat exhibitions in our discussion of the whole subject of live stock showing. We hasten, however, to explain that the Society's invitation was not accepted in the hope of the writer being able to throw much light on the subject to the comparatively few breeders and others, who have for many years watched with an intelligent eye the effect that successful and even unsuccessful exhibition of stock has had upon stud, herd, and flock. Those observant members of the agricultural community referred to have doubtless formed their own opinions on the question under discussion. Our object will be accomplished if, in the views and arguments expressed further on, we are nearly in accord with the conclusions of the breeders and others just alluded to, and should succeed in riveting the attention of the many owners and occupiers of land who have not had so much experience of stock showing as some of their brethren.

In the remarks which are to follow we make no great pretensions. Nor have we deemed it desirable to collect and embody here in detail the views and experience of leading agriculturists. We simply intend to discuss the showing system, with its *pros* and *cons*, and to record our own experience and observations, which extend over nearly a quarter of a century. One reason why we did not collect and print here the experiences of the more noteworthy breeders and exhibitors of stock is, that the views about to be expressed are in some measure the result of a free and frequent exchange of opinion on the matter with many of the foremost exhibitors of their day during the last twenty years; that is to say, the conclusions at which we have arrived are attributable to interchange of opinion with some of the highest agricultural showyard authorities, as well as to the observations of the writer himself, extending over a pretty long period of showyard attendance. It might be too much to expect that the following pages will be edifying to those who have watched and weighed the showyard system in all its bearings for many years, but the large number who have not been so long in harness we may aspire to interest, if not altogether to instruct and guide.

Often has it been stated in our hearing by practical agriculturists, that the exhibition of stock, in the style in which breeding animals have been prepared for the national shows during the last thirty odd years, has been positively injurious, and should not be encouraged—in fact, should be stopped. We never could quite see that, and before this article is finished it is to be hoped reasons will be given of a convincing nature for the opinion the writer entertains. Frankly will it be conceded that the preparation of stock for—especially the breeding, but also the fat—shows of the last twenty to thirty years has been carried in many instances to excess. It has been so in some cases by those who might have been supposed to know what they were about, but it has been so more remarkably still by those who were not thoroughly acquainted with what they were doing. Men have attempted to bring out stock for national and leading shows who were comparatively ignorant of what was required, and worse still, possibly young and inexperienced but enthusiastic breeders have fattened by far too many of their animals for the showyard. In the selection of beasts to subject to what undoubtedly is a trying ordeal, there has in hundreds if not thousands of cases been a lack of discrimination and judgment.

Because young and reckless breeders and feeders have largely overshot the mark, is our whole showyard system to be condemned? We do not think so. Shows and showing have been characterised as the ruin of many a man. Some may have been ruined in that way, but not very many. The pampering of stock for exhibition, however, has unquestionably been a losing game to many a farmer. If resorted to judiciously and not on a too extensive scale, there need not be much if any direct loss, and there certainly will be indirect gain in most instances. As things have gone during the last twenty or more years, however, there is only too much reason to fear that in some instances the beneficial results of showing, either directly or indirectly, have been almost *nil*. Losses have undoubtedly been incurred, but with a little more experience and better judgment they might have been modified, if not averted.

The pampering of stock that never should have been selected for such a purpose, and the fattening of by far too many animals by young but aspirant breeders, have done more probably than anything else to engender a feeling in certain quarters against shows and showing. Beasts have in numerous instances been set aside for the high pressure system of fattening, and have been subjected to that treatment without due regard having been paid to the constitution, and occasionally also the breeding value, of the animals. Disappointment is very apt to follow. Should our great national shows be on that account abandoned? The reply, in the writer's opinion, and in that of many others, is in the negative. If the preparation of stock for the shows has been overdone or abused, the exhibition system remains comparatively intact in principle. The mark, so to speak, may have been often missed; indiscretions may have been committed in the preparation of stock for show, but the exhibition system in its essential features can be defended nevertheless. A defence of it we mean to offer, though not without considering and representing the objections that may fairly be taken to it.

Before however embarking on the advantages and disadvantages of shows, as carried on during the last thirty or more years, let us very briefly direct the reader's attention to the history of stock showing in this country. It is chiefly confined to the present century. The Edinburgh Society for the encouragement of Arts, Sciences, Manufactures, and Agriculture, at its show in 1757, awarded a prize for the best draught stallion, and also a premium for the best fat calves. This is the earliest live stock competition in Scotland of which any record has come under our eye. The Highland Society, as stated in Mr. Ramsay's *History of the Highland and Agricultural Society of Scotland*, began its assistance to district shows so early as 1789. In that year the Highland Society offered a seven guinea gold medal for the best Highland bull belonging to a proprietor or farmer in Argyllshire. The competition took place at Connell, parish of Kilmore, on 20th October. The same year smaller prizes were offered for the best bulls in several outlying districts of that county. The Highland Society's first general show was on a small scale at Edinburgh in 1822, when only cattle and sheep were shown—59 entries of the former and 89 of the latter, with £78 as prize money. Several county or district associations, however, as already stated, had held shows of live stock before that year. The Garioch Farmers' Club, in the centre of Aberdeenshire, for example, formed in 1808, held its first live stock show in 1811. The Morayshire Farmers' Club started shows about the same time, while the Fettercairn and other societies farther south were a few years afterwards in the field. Regarding the Morayshire Farmers' Club, its first meeting, we are informed, was held in

1798, but, so far as the minute book narrates, there must have been a blank shortly after the year 1800. At a meeting of the Club, held on 18th January 1822, it was recommended that another cattle show, for breeding stock only, should be held at Elgin on the first Friday of August. There had thus been a show, or more likely shows, at Elgin before 1822.

The first agricultural show of which there is any record, so far at least as we have been able to trace, was at Neale, in county Mayo, Ireland, where, in 1750, prizes seem to have been offered for the best yearling cattle, and the best one-year old colts or fillies. This was started by Sir John Brown in connection with a monument to Dean Swift, but there is no record of its success or of its being continued. The oldest existing agricultural society, if we mistake not, in the United Kingdom, is that of the Bath and West of England, which celebrated its centenary meeting by a very successful show at Bath in 1877. Up till 1850, however, that society did not do so much with showyard work as in the dissemination of agricultural literature. In that year it started live stock exhibitions on a wider scale, and has grown gradually since towards national dimensions. There is evidence, however, that before the dawn of the present century the Bath Society, as it was originally termed, and several other English societies, held live stock shows of some kind. In Billingsley's Report on the Agriculture of Somerset, written to the Board of Agriculture in 1795, it is stated that "Mr. White Parsons of Ilchester has exhibited before the Agricultural Society at Bath, for the premium offered by that society, a young bull of his own breeding, together with the sire and dam, of the Devonshire race, and all breeders were challenged by him to produce at the said exhibition any three of equal value for stock, but no competition appeared, and the premium was deservedly adjudged to him."

The journals of the Bath Society, published towards the close of last century, show that prizes were offered for stock almost every year at an annual meeting in December. Both fat and lean sheep and cattle as well as horses were recognised.

The early competitions with live stock in England were on a small scale compared with the later exhibitions. To a well-known authority in English agricultural literature, Mr. Joseph Darby, we are indebted for the appended extracts and jottings, which indicate that shows of some kind had been carried on in several parts of England during the last quarter of the eighteenth century. The late Edmond Black, advocating the establishment of the Bath Society founded in 1777, wrote a letter to the *Farmer's Magazine*, pointing out that agricultural societies existed then at Norwich, York, Manchester, and Brecon. In another issue of the same publication, it is stated that the Duke of Richmond presided over a meeting of the Sussex Agricultural Society at Lewes on 1st

August 1777, when premiums were offered for several things connected with agriculture. On that occasion the following prizes were offered:—"To the person who shall produce the best two-year old bull, bred upon land in his own occupation, silver cup, value 5 guineas; for the best two-year old ram, &c., the same premium; for the best four-year old colt or filly, same premium. *N.B.*—The three large premiums will be adjudged at Lewes the last day of the next races, at 11 o'clock in the forenoon." In the *Farmer's Magazine* for the same year there is a list of premiums offered by the Richmond Agricultural Society, Yorkshire, twenty in number, of which six were for the best specimens of farm stock of different kinds. There is also a list of the prizes offered by the Barotry Society, amongst which were premiums for the best longhorned bull, best longhorned heifer; best shorthorned bull, and best shorthorned heifer.

The development of the exhibition system was slow, as was the progress of trade and commerce until after 1840. By that time, however, agricultural societies, and shows in connection therewith, had been established in almost every county, not only in Scotland, but in England. The Royal Agricultural Society of England held its first show at Oxford in 1839, by which time the Highland Society's Shows, and the Smithfield Club Fat Shows in London, had attained considerable dimensions. Year by year, from 1840 onwards, shows gradually grew in numbers and in extent. The more rapid strides were accomplished from 1854 to 1865, which was a period of agricultural prosperity. The reader is now brought to a comparatively modern era, during which most people know that tolerably successful exhibitions of stock have covered the whole kingdom, if not indeed the whole of the civilised world.

Is it possible that any system, bad or unsound in principle, could have, in the second half of the nineteenth century, grown and prospered as live stock shows have undoubtedly done in the United Kingdom, as well as in other parts of the world, since 1850? The answer should be obvious. It is surely very improbable that the leading men connected with agriculture during the present century should have united to foster a system calculated to injure rather than promote the interests which were so near and dear to them. It may with some truth be said that the disadvantages of live stock shows are, comparatively speaking, discoveries of yesterday; that is to say, that any evils with which the system may be associated have only latterly developed themselves. We are not to dispute that statement, but we believe it can be shown that the drawbacks are still considerably short of the benefits of even the modern showyard. Moreover, it should not be difficult to prove that the adverse influences or effects of shows can, with the exercise of a little more discretion on the part of exhibitors, be largely mitigated, without in the slightest impairing the character of the exhibitions. Admitting, then, that the showyard system of modern dimensions has been fraught with certain disadvantages and discouragements, we again assert that these prove light in the scales against the benefits. Before describing the advantages of live stock exhibiting in modern, or we should rather say present times, it is proper that some account should be given of what the competitive system has done for the agriculture, especially the stock breeding, rearing, and fattening interests of this country.

The first question, then, that naturally crops up for consideration is, would the agriculture of the kingdom have been in its present advanced state practically, if live stock shows had never been established? With perfect confidence, we reply in the negative; nay, more, we assert that both breeding and fat shows have contributed immensely to the great improvement which has been achieved in the course of the last half century in the production of beef and mutton. But for the existence of shows—national and local, fat and breeding—where would many of the leading herds of the present day have been, and what opportunities would breeders and feeders have had of educating themselves and of comparing notes? The answer must be plain and evident to everybody who has studied the subject in its full bearings.

Started, as shows in many parts of the country were, at a time—between 1810 and 1850—when notably, of course, in the earlier portion of the period, the agriculture of the country was in a comparatively crude state, the stimulus they imparted to rural industry was pronounced and great. The rivalry which the offering of prizes for the best animals in the various classes encouraged, has been productive of much good. It has been so as between one competitor and another, but the salutary effects do not end there. They extend far beyond the ranks of the competitors, though they are not inconsiderable there. This brings us to a very important point, and that is the educative effects of live stock exhibitions outside even the extensive ranks of pedigree stock breeders and of Smithfield show competitors. The full magnitude of this educational establishment, so to speak, is not easily ascertained, but all must admit it is considerable.

Those who attend showyards usually find them instructive, even at the present time, but thirty or forty years ago the information imparted by live stock and agricultural implement exhibitions was more emphatic, and probably more serviceable than now. That arose not so much from the character of the displays as from the condition of the public mind on these matters—the necessity for instruction—existing at the time. Shows, both national and local, particularly the former, have for many years been schools of agriculture. That being so, any defects that the exhibition system may have should be all the more readily overlooked.

Prior to 1850, farmers were in many respects unable to avail themselves of what they saw or learned at shows. Some, of course, had even then education and means to give the improvements demonstrated in the showyard a trial and a fair chance. The bulk of the farming community, however, were not so favourably situated. They may have picked up some ideas at the various exhibitions, but straitened financial resources, as well as some other causes, precluded general adoption of the newer principles displayed at the periodical bucolic gatherings. Latterly the adaptation of novel machinery to more ancient undertakings has been a simpler process. Increased intelligence, and more thorough education on the part of farmers, enabled them to derive more benefit from what they observed, both in the bestial departments and in the implement section, than their fathers could have done. It is probably due to the memory of their fathers to say that the sons have had greater opportunities, not only in, but out of, the showyard. More immediately concerned with the latter, as we are just now, it has to be said that the educative influences of British shows has been much more decided since 1850 than before that date.

The writer's commission may not, strictly speaking, be held to embrace the exhibition of agricultural implements, but if we include that large and serviceable part of modern showyards, there should not be danger of rebuke for digression. Agricultural machinery was not so early exhibited as live stock, but for thirty years or upwards the former section has been more or less attractive, at national shows at least, and latterly it has been so even at local or district displays, while it has swollen to marvellous dimensions at a few of the leading meetings in the kingdom. It is now-a-days, perhaps, more beneficial to practical agriculturists than the bestial sections, if not more popularly engrossing at the outset. In what other manner, it may not unfairly be asked, could farmers, eager to avail themselves of labour-saving machinery, and implement manufacturers, anxious to meet with farmers ready to adopt modern ideas, have been brought together? Shows, national ones especially, have done a world of good in that respect. They have afforded the farmer a chance of comparing his opinions of one manufacturer's machine or implement with anothers, and that is a privilege which has been discovered to be of great value to practical farmers. If every farmer, or nearly so, has not embraced this opportunity, the fault is that of the individual rather than of the showyard system.

There probably are not many who believe that shows never did any good. Generally, it may be said, there is substantial unanimity in favour of the opinion that shows in their earlier history were decidedly beneficial to agriculture. It is sometimes said now, however, that the exhibition of live stock has had its day and served its purpose, and need not therefore be persevered with. Granted that the showing of horses, cattle, and sheep was, relatively speaking, of more advantage to agriculture a quarter of a century ago than now, the good effects of exhibitions are still sufficiently strong to justify adherence to the principle of live stock competition. It is not necessary nor desirable that there should be so many small shows over the country, carried on at least as they have latterly been, but we hope to be able to convince some who are rather sceptical, that shows and showing should not be abandoned, even though the benefits may not be so perceptible as they were at one time.

But for the existence of live stock competitions, as already indicated, farmers would not have had the opportunities they have long possessed of improving their herds and flocks. They would not have had the chance of comparing their own productions in a critical and careful manner with those of their neighbours or brother breeders in other parts of the country. The shorthorn would not have found its way to nearly all quarters of the globe if there had been no shows. The foreign demand for British pedigree stock has been mainly developed through the influence of shows. Foreign buyers generally come to Britain in the showyard season. Not that they are now so fond of the overfed showyard specimens as they were several years ago, but they see what the various breeds can be brought to with careful breeding, and above all, liberal feeding. They see what to avoid, as well as what to select, more satisfactorily in the showyard than they could otherwise do. They meet the breeders and arrange visits to the leading herds and flocks of the varieties which the foreigners intend to patronise.

One of the most remarkable evidences of the extent to which successful appearance in the showyard promotes the foreign demand, was furnished by the late Mr. M'Combie's career as a breeder and feeder of polled cattle. His great achievement at the Paris Exhibition in 1878—beating all breeds and all nations with his group of polls—did more probably than anything else if not to begin, at least to spread, the now considerable demand for polled stock in America and Canada. We all know how largely that foreign demand has contributed to the rapid advance in the price of polled stock, amounting to nearly 100 per cent. in little more than a year.

Among the advantages of shows must be prominently ranked the improved marketing facilities which they afford to pedigree stock breeders. In addition to the impetus which the presence of a considerable number of foreign buyers usually imparts, there is often a good deal of inquiry after really good animals on the part of home breeders and dealers. The direct selling and buying opportunities of the showyard are thus, and have long been, by no means infinitesimal. They operate as an inducement to bring stock into the competition arena which might otherwise be left at home, and would be missed. Of course there are many other inducements. The honour of winning a first prize in a strongly-contested class at either local or national shows, the latter particularly, is justly appreciated very highly. It is no mean feat, and is something of which to be proud. Apart from the pride of the thing, leading showyard honours go far to "make a man's herd." There is probably nothing that raises a herd, a stud, or a flock so much in public estimation as a series of hardly-won showyard laurels. Well that, by increased demand and consequent enhanced prices, benefits the breeder in question, provided always that in order to gain those prizes he has not sacrificed too many of his best animals. It may be doubted if the public benefit to the same extent; but if they are gainers at all, as we believe they are, by having the widened field of selection, furnished by shows, within their reach, they should have little reason to complain.

Why should the word sacrifice be applicable in the sentence before last? It is a fact, that the preparation of stock for showyards has for many years involved and still implies a sacrifice, more or less complete, of the breeding properties of the animals. In the early days of showing over-feeding was not so common. By and by, however, competition became so keen that excessive feeding was practised, as was also a good deal of trimming otherwise, and these services have been in a large measure successful in prize gaining. The more is the pity. The over-feeding or pampering of breeding stock for the sake of showyard glory is the worst feature of the agricultural exhibition system of modern days.

We shall endeavour to point out the means by which that mischief may be mitigated, but we are not sanguine of seeing it entirely prevented. Various attempts have been made to grapple with the evil, but they have only been very partially successful. For one thing, there is great difficulty in drawing the line here, as in many other matters, simply because a degree of obesity that will injure the breeding properties of one animal will not seriously, if at all, impair the procreative powers of another. Hardly two animals are affected alike by a similar accumulation of fat and flesh. Judges can scarcely be expected to incur the responsibility of setting aside animals that may seem too fat for breeding. If that is to be performed, it should be by a specially appointed committee. The task, however, would be a delicate one, and injustice would be ill to avoid. Animals might be condemned as hopelessly fat for breeding, which would go on for years thereafter breeding regularly, while some would be admitted which would fail as breeders. Of this there was striking evidence a few years ago at the Royal Agricultural Society's Show in the shorthorn heifer class rising three years. A heifer of great scale, but very fat—more like a Smithfield than a breeding show animal—was relegated to fifth place in the prize-list on account of her apparently over-fed state, and many onlookers approved of the judges' award, thinking that the animal was too fat for breeding. Strange to say, however, the heifer not only had a calf in due time, but eventually came in for the first money prize, all the heifers in, to all appearance, a more moderate state of feeding, placed before her originally, having failed to produce calves.

The evil of over-feeding with which modern showyards have become associated is so great, that a committee of inspection, or probably we should rather say of acceptance, of live stock into a national show might be tried. It might not work very well, but an endeavour should be made to suppress excessive fattening of breeding animals by other means than casting the responsibility on the judges. A carefully-selected committee would be the best tribunal before which the obesity of the stock could be tested. While this proposal is worthy of a fair trial, it may be doubted if the eye or the hand either is capable of absolutely or accurately determining the point. The truth, we presume, is, that it cannot be accomplished anything like infallibly or precisely. If the line of demarcation, however, can be indicated in a general way, or with substantial justice by an experienced and select committee inspecting the stock as they enter the yard, then we say let this proposal have a chance of displaying what it can accomplish.

Freely will it be conceded that, in an earnest attempt to gain some showyard notoriety, the breeding properties of many really fine animals have been in a large measure sacrificed, owing to the high-pressure system of feeding which has unfortunately become almost essential to success in modern national showyards. It has often been said that breeding stock should be shown, comparatively speaking, in a natural state of feeding. That is all very well as regards local shows, where the stock have only a few miles' journey. A good judge will then have no difficulty in picking out the best beasts. They will be in a good fresh state, and should be little the worse of the journey to the competing ring. It is, however, a very different thing with national shows, or in the case of stock having to undergo a long and fatiguing passage on rail. Take, for example, grass-fed animals—horses, cattle, or sheep—brought from Morayshire to Dumfries, and how will they look on their arrival, or for some days thereafter? Very much jaded indeed. Frequently has it been said, and with much truth, that there are many judges of a fat or fully-developed animal, but very few positively sound judges of lean or grass-fed stock; in other words, a fat animal is much more easily judged than a lean or moderately conditioned. Judges, however, could be got to award prizes fairly and equitably to ordinarily fed breeding animals; but how would the beasts look after a journey from one end of Scotland to the other? Judges might know them, but they would be almost ashamed of them. The long railway passage would shake the animals beyond recognition unless they were in very high condition. Before quality and contour can be preserved over a long journey, there must be not only a great deal of fat and flesh outwardly developed, but no inconsiderable quantity of fat inside. That fact is the greatest barrier to a successful endeavour to suppress the over-feeding so much complained of at breeding shows.

While we thus cannot suggest a complete cure for the greatest evil connected with breeding stock exhibitions, a substantial mitigation of the adverse influences is within the range of probability. There should be no necessity to feed so very highly as some people do in any circumstances; but it must be admitted that, without liberal diet and careful treatment otherwise, exhibiting at national shows is perfectly purposeless.

Though the showing of live stock has done good service to the agriculture of Britain, and has in a large measure, if not wholly, fulfilled its purpose, it should not be allowed to cease. The country requires the continuance of shows, but a stage has been reached when exhibitors and societies can look around them and consider whether or not they are in every respect on as sound and serviceable rails as they might and should be. If this is done, the result should not be doubtful. Exhibitors should, on reflection, be convinced that they need not fatten so hard, or at any rate so many animals, to achieve their purpose. Societies should see that over-feeding is discouraged by every conceivable means, which can hardly be said to have yet been the case.

The advantages of shows are much less striking and apparent than they were thirty to forty years ago, and the disadvantages greater than they were at one time. True as this is, the country is not prepared for a cessation of bestial exhibitions. Fewer shows, especially of the district nature, should probably be held. So many of the local shows now overlap in area embraced that amalgamations would be beneficial. In Ayrshire, Renfrew, and Lanark, for instance, there are several parish shows and a large number of district ones. These, by means of amalgamation of societies, might be reduced by one-half with convenience to the public and advantage to the counties named. Then, in Aberdeenshire alone there are nearly thirty shows held annually. Less than half that number would fully cover the county, large as it is. As a rule, pretty much the same animals are shown at three or four of these meetings, if not more, both in the west and the north-east of Scotland. That lends a sameness and a modified interest and freshness to the shows, which they would escape if fewer were held. In the number of shows, therefore, as well as the feeding of the animals, the judicious limit has in some parts of the country been surpassed. In the south-eastern, as also the central and far northern counties of Scotland, shows are not nearly so numerous—the average being not more than three in a county. The Highland and Agricultural Society has done its best to discourage the occurrence of several shows covering to a greater or less extent the same district of country. Recognising the overlapping of not a few local and district show areas, the Society two years ago resolved not to give its "district show premiums" to any local society which has any portion of its domains occupied by another society or societies. Though the Highland Society's prizes thus find their way to "fresh" animals in the different districts year by year, there is nevertheless a great deal of sameness in the collections of stock in those parts of the country where, as already stated, exhibitions are so numerous. The National Society cannot do more to encourage amalgamation of district shows than it is doing. The local societies, however, should see the propriety of decreasing the number of small shows.

Some people assert that, notwithstanding the existence of shows over a wide range of country for thirty or more years, and despite the increased attention paid to the breeding and rearing of first-class stock, the best animals of the present day are not better than, if as good as, the best more than a quarter of century ago. We do not share that opinion. The matter, however, is capable of explanation. First or early impressions are proverbially difficult to efface. The above assertion is usually made by agriculturists who began their show-going career thirty odd years ago, and were naturally impressed by the finer animals which they first saw in competition. These gentlemen have been attending exhibitions steadily since, so that, through lack of novelty to them, they were not so likely to be enamoured by what they witnessed as they were at the outset. Moreover, there is a tendency, with increasing experience and spread of general intelligence, to form higher ideas as to what an animal should be than are entertained by men setting out in the world. These facts and circumstances account in a large degree for the statements we have heard in the showyard coming from men now well up in years, to this effect—" Well," pointing to some huge beasts, " these are really not so grand as some of the winners of the same breed that I remember thirty-five years ago."

But the greatest benefits of shows have not been displayed by the improvement of the top specimens or " stars " of the various breeds, considerable as that, doubtless, has been. The good results of the education which exhibitions and keen competition imparted, have been more manifest in the general improvement of the ordinary rent-paying stocks of the country than in the showyard specimens. Of the latter, however, there has been a material advance during the last quarter of a century, both in numbers and quality. To farmers of ordinary intelligence, visiting county and national shows, it has been demonstrated that cattle of the beef-making, as distinguished from the dairy races, possessing medium-sized clean bone, wide chest, sharply cut symmetrical head, and bright eye, with mellow " touch," are the kindliest and best feeders. Many a shrewd agriculturist, who seldom if ever appears as an exhibitor at a national show, has profited by what he has seen in the breeding shows and also in the great fat stock gatherings. The lessons of the latter have taught successfully, we may say, thousands of farmers to give more attention to the production of stock with comparatively light offal and an increased quantity of beef on the back, and over the chine, where the most valuable meat is. More liberal feeding, and greater attention to details in mating and management, have impressed themselves successfully on the minds of hundreds of agriculturists in the showyards of the last forty years.

Those who imagine that live stock shows have served their purpose, and should now be given up, ought to consider the position in which agriculturists would find themselves if such gatherings were abandoned. It is a very sober pursuit or profession that cannot afford one red letter day in the year. The occurrence of the local, the county, or occasionally also the national show, serves somewhat to break the monotony of a toilsome and frequently rather dull life. Agricultural labourers, as well as landowners and occupiers, find much to interest them in large and representative exhibitions. They obtain information therein which they could not derive by any other known means. Their own ideas of either an animal or an implement can be, and generally are, compared with those of other people equally well able to judge, and perhaps more experienced.

The mere holiday or pleasurable aspect of the shows is not to be altogether overlooked, especially in a profession which has not very much conviviality, gaiety, or luxury about it; but it would be a dark day for agricultural exhibitions if nothing more could be said for them than that they afforded a pleasant "outing" to the people of the district, county, or country. As has been indicated already, there are stronger pleas for the continuance of shows than the holiday pleasures. The rivalry, as before stated, which shows impart amongst exhibitors of the various pedigree breeds of stock is calculated to promote the cause of breeding. If a breeder happens to get on the wrong rails—if his stock threaten to display a positive defect or blemish, appearances alongside others in the showyard are more likely than anything else to convince him of his mistake and to set him earnestly to rectification. So long as agricultural shows effect such a salutary purpose as that, their continuance merits every encouragement, even though some of the objects they once served may have been more or less fully accomplished.

It must not, however, be assumed that we urge the increased attention of all societies to shows and prize-giving for stock. Many associations, including the Highland and Agricultural Society, the Royal Agricultural Society of England, &c., have now other fields of interest and investigation opened up to them by which they can benefit agriculture, more perhaps, because there are greater arrears, so to speak, than by further augmentation of the premium sheet of live stock. Our contention is, that the inducements offered to exhibitors of cattle, sheep, horses, and pigs should be continued in all the main centres of agriculture at least, but that the time has come when other departments of farming should share more extensively than has yet been the case the attention of the various societies. That can be managed without detracting from the inducements which the live stock prize lists now possess. These should be sufficient, or nearly so, to ensure the continuance of good representations of the different breeds at the various shows. Therefore societies should devote no inconsiderable portion of their increasing resources to the, in the past, more neglected, but very important branches of agriculture, such as field experiments with manures, the propagation of new and improved varieties of plants, roots, &c.

Hitherto we have concerned ourselves mostly with the advantages of exhibitions. We have endeavoured to show that, while the number of exhibitions in some parts, notably the south, west, and the north-east of Scotland, should be reduced by the amalgamation of two, three, or four societies, which overlap each other; that while less benefits are now-a-days likely to be derived from shows than was formerly the case, it would be injudicious and undesirable to allow agricultural exhibitions of a representative character to decline. Before proceeding with a description of the means by which breeders, feeders, and exhibitors could, independently of the actions of societies, mitigate the evils of which showyard frequenters complain, let us refer to the disadvantages of the showing system.

The most frequently raised objection is, that the breeding properties of many valuable animals are impaired if not entirely sacrificed, by the over-feeding with which the exhibition of breeding stock, at national shows particularly, has latterly become associated. Allusion has already been made to this unquestionably great drawback. We do not consider that it can be entirely obviated except by the discontinuance of breeding stock shows, and then, in our opinion, the country would be paying too dearly for the remedy. The cure, in fact, might be worse than the disease. But something considerably short of a complete cure would give general satisfaction. The country must have its shows, especially its leading ones; and, keeping in view the many indirect advantages of these exhibitions as educative institutions, the existence of some direct disadvantage can be borne with.

Our position is simply this, we must make up our minds to some disappointment, and even sacrifices, in order to continue the exhibition system, which has done so much for the agriculture of the country, and which, though not quite so effectual now as it once was, would nevertheless be greatly missed. Modify the mischief resulting from the shows as far as possible, and a considerable modification is practicable, but adhere to the exhibition principle alike as regards breeding and fat shows. Such, in brief form, is our advice.

Next to the injury to the procreative faculties of breeding stock, we have the exhibition system charged with unprofitable and excessive consumption of costly concentrated foods in the preparation of stock for the chief fat shows. In this instance, of course, there are no breeding properties to spoil, but economical production of good useful meat is at stake. Economy in the training of animals for the leading national fat shows finds little or no recognition. That cannot be disputed. No food which the beasts can eat is spared, no labour or attention which may promote the development of the animals is withheld. To produce what? Really prime well-mixed eatable beef or mutton. We fear not. It is more frequently fat and blubber that are produced by the extravagant feeding practised for the fat shows. At any rate, the fat and unpalatable food furnished by beasts pampered for the great Christmas shows usually predominates over the flesh.

The principal national fat shows, however, are not quite Christmas markets. They are meant to accomplish something more than merely provide a lot of prime meat for the butchers' shops at that festive season. They are, so far at least, intended to instruct the agricultural public as to the varieties of stock capable of the greatest development at the earliest age. In this respect the Smithfield and Birmingham Shows of recent years have shown substantial advances on the exhibitions of some years ago. Early maturity is much more prominent than it was even half a dozen years back. Excessive obesity, and we fear, directly viewed, unprofitable production, are still visible, but that is not likely to disappear, though it will further diminish with time and experience.

One of the greatest objections to the national breeding shows of modern times is, that in colossal proportions, in wealth of flesh and fat, there is too much resemblance between the appearance of the animals at the breeding and the fat exhibitions. That, of course, is more the fault of the breeding show training and system than the fat. Some instances have already been given of seemingly very fat animals in a breeding show, producing stock more regularly and satisfactorily than leaner specimens. In addition to those named, we may refer to the Rev. Mr. Bruce Kennard's celebrated shorthorn, " Queen Mary," which carried everything before her in England as a heifer in 1874 and 1875, and as a cow in 1876. She was in very high condition—was probably the best shorthorn shown in this country during at least last decade—and would at no stage of her showyard career have disgraced Smithfield. Well, since 1876, she has been principally at home, and has bred regularly, while she looks far from finished as a breeder. From this magnificent shorthorn, one not unnaturally turns to Mr. T. H. Hutchinson's "Grateful," "Gainful," and "Gratia" at Catterick, Yorkshire. They have been champion females in England, have been in very high condition, and have at the same time bred splendidly. "Grateful" has succumbed, but after she had all the wealth and finish almost that a Smithfield beast could bear, she produced some prize winners, including " Gainful " just alluded to.

The only other breed of cattle in Scotland that has been fattened so highly as shorthorns for breeding shows, is that of Polled Aberdeen and Angus. In England, the Herefords and Devons have been "forced," as well as the " red, white, and roan ;" but in Scotland the Galloways, Ayrshires, and West Highlanders have not been " overdone" to the same extent as the other breeds. Among the northern polls that have been in full showyard condition, and still bred pretty regularly, mention may be made of the Ballindalloch cow "Eisa" (977), which was the first winner at Perth Highland Show in 1871, cup winner as best polled animal at Aberdeen the following year, produced ten living calves, and was killed lately in her sixteenth year. She, too, produced prize winners, and was of the famous Erica tribe. The Marquis of Huntly's "Madge" (1217), of the same breed, and likewise tracing back to Keillor, first prize cow at

Kilburn International Show, was in full condition for half a dozen years at Aboyne; yet she had a calf, and a very good one, every year—never taking the bull oftener than once in a year. She too produced prize winners, including the first prize Perth Highland Society's aged bull in 1879, "Monarch" (1182), now at Powrie along with his dam. These three animals, and some others to which reference might be made, were not fed hard in their youth or growing days. To this in a large measure we ascribe the retention of their breeding properties unimpaired in after years, even under the high feeding which preparation for national shows involves. Probably no family of cattle in modern times have bred so regularly and reproduced themselves so accurately while in showyard condition almost all along, as the "Sybils" of Baad's descent, and now more numerously in Lord Strathmore's possession than in any other herd. Other instances could be given of animals breeding satisfactorily and still remaining in exhibition trim. Enough has been said, however, to demonstrate that it is very difficult to judge precisely by external appearances when an animal is too fat to be of any service as a breeder.

Beneficial results, as before explained, might follow an earnest endeavour on the part of national societies to check overfeeding by the appointment of say three highly-qualified practical men, who would inspect the live stock sections before the judges begin their awards, and reject any very glaringly overfed specimens; we say "glaringly," because a margin should be allowed. Good work may be performed in that direction. We have, however, rather more faith in what breeders and exhibitors can accomplish for themselves. With the exercise of more caution and judgment in the feeding of stock for breeding shows, as stated at the outset, the evils complained of may be materially reduced. Young breeders, with more money and enthusiasm than experience, often commit huge mistakes. They fancy a first prize yearling or two-year old as the case may be. The animal has been fed to the utmost since its birth, and looks well. My lord it may be, or at any rate a young breeder eager to accomplish two almost incompatible things, pays a high price for the animal. The first hope of the purchaser is that the beast will keep its front place in the showyard next year, and the second is that it will reproduce itself at home, and thus raise the lately started herd, stud, or flock in numbers as also in name. Well, in this, aspirants to showyard honours and a position among breeders of a certain race of stock make a mistake, as many have discovered. Animals fattened young may take a leading place in the juvenile classes, but as a rule—though exceptions are pretty numerous—they do not wear well. And when they change hands, especially if they go into the possession of a young breeder, who cannot always have at command the best of herdsmen, they often lose bloom if not form and quality. In short, first prize youngsters, purchased at high prices by noblemen or gentlemen, are not usually good investments. They might not prove so very badly if no attempts were made to keep them in showyard condition—a very difficult thing to do if the animals, as is frequently the case, leave experienced for inexperienced hands. If an animal has been doing exceedingly well in the possession of its breeder or first feeder, it seldom goes on as satisfactorily at its new home, especially if the climate is materially different. Moreover, it should be kept in view that first prize winners in the younger classes, if brought out in what is popularly called perfection, which generally signifies as hard feeding as the constitution can bear, have very little to gain, but a great deal to lose.

Young breeders should bear that in mind. They should do something more. They should not attempt to found a breeding herd and take a leading position in the showyard with the same animals. Those who endeavour to accomplish this often fail, comparatively speaking, in both. That is to say, they have, through the effects of obesity, breeding disappointments which can ill be borne at that early stage of the herd's career. In addition, they have showyard discomfiture, in that the animals which they fancied and paid dearly for, winning in other and more experienced hands, cannot, in the changed circumstances, keep their premier places. These facts point to the conclusion that noblemen and gentlemen starting herds, studs, and flocks should not do so by first purchasing the highest prize animals in the younger classes, and then endeavour to keep them in the front ranks in future years. Those who can manage this—and there are not very many—have not smooth work after they succeed in competition. The breeding mishaps and irregularities that are so frequently connected with modern showyard preparation, may be comparatively trivial to a large or old established herd, but they cause a serious gap in a newly started herd, flock, or stud.

Enough has been said—and it has been penned as the result of personal experience and observation—to indicate to young breeders amenable to reason, that as a rule money will not purchase leading showyard honours. Occasionally it may do so, but what kind of a herd, flock, or stud would they form by simply buying at high prices overfed specimens that may have triumphed in their seller's or breeder's hands? We fear it would not grow so rapidly in numbers as would be desirable. High honours in a national exhibition are justly coveted. Gentlemen who have lately turned their attention to the subject are especially fond of the brighter tickets. While we sympathise with that love, we cannot refrain from telling young breeders that many of them expect by far too much. They should not rush into the hot arena. They should select well bred but not overfed specimens to commence with. Their first object, if they really mean to do any good to themselves, or to the breed they patronise, should be to get animals that have a reasonable prospect of reproducing themselves. At any rate, they should look first to breeding. In the course of two or three years they may be able to take the field with something of their own production. If they only reflect on the point, they will see that the lion's share of the honour of winning with beasts bred by other people does not fall to the exhibitor, particularly if the animals have been brought out successfully for first place before they became the property of the new owners.

Let the beginner, however well he may be fitted as to advice and practical assistance, avoid in his selections very fat first prize heifers, gimmers, or fillies. At least, if he is tempted to invest in them, he should not think of keeping them in showyard trim for next year. He should reduce them, and get them settled as breeders. But for a commencement we should very much prefer moderately fed and well bred sorts. In the showyard, no doubt, a searching judge can pick up a good beast not much overdone in feeding, but its value is all the greater to a young breeder that he does not press it on for national shows. Showyard honours will come by and by, if good stuff is selected as a foundation, and if the management is not defective. Again, we say to young breeders, buy good material, but do not run into the showyard with it. Give it a chance to reproduce itself, and your herd, flock, or stud a full opportunity of growing considerably in dimensions before showing, which involves high feeding or pampering, is attempted.

If the recruits to the ranks of pedigree stock breeders were to follow the course just sketched, there would be fewer complaints of the mischievous tendencies of shows or the disappointments associated therewith. Greater pride would be felt when a prize was won by an animal of the owner's own breeding and bringing out than by a purchased beast, and the herd to which the prize goes would, in public estimation, be benefitted by the performance much more than if the winner had been bought in at a lavish expenditure of gold. Briefly, then, beginners should buy carefully, mate judiciously, and wait for the development of results before the question of training for the leading shows is seriously entertained.

After they have got their stocks up to fair numbers and into regular breeding condition, which generally takes four or five years, if not more, breeders should turn their attention to exhibition as the best known means of bringing whatever merit their stock may possess before the public. This we consider is one of the most beneficial features of the showing system. Perhaps it is, so far as breeders of pedigree stock are concerned, the most serviceable. Extensive fattening should even in these circumstances be avoided. There is no occasion for it, and there is much to be said against it. Breeders of only a few years standing, who have their spurs to win, should not lose an opportunity of letting the show-going public see what they can turn out of their own breeding. In other words, the first really good produce of the young herd not exceeding, say two animals, should be brought out, not as yearlings, but as two or three-year olds. By and by an occasional yearling may be exhibited, when the herd has assumed those dimensions which can afford a breeding failure or two. It is not numbers that actually make a show; neither do the advantages of exhibition to a young and rising herd depend on the number of representatives brought into competition from that herd. Some breeders consider they are not fully represented if they have not an entry in every class of the breed which rejoices in their allegiance. That is folly. Two or three entries or animals, if wisely selected and properly dealt with, should be sufficient to either help on a lately commenced herd, or maintain the position of an already well-known and tried stock.

Breeders whose stocks have a good deal to win should keep their weather-eye open to every feasible opportunity of scoring something, so far as showyard victories can do it, to the credit of the herd, stud, or flock. By that we mean that likely winners should have a fair chance if bred by exhibitor. It should not be necessary to attain this object to fatten stock quite so hard as some have been fed in the past. If the stock is really first-class, and only then do we advise showing, a liberal diet such as would produce a full-fleshed specimen should be sufficient, particularly if a long fatiguing railway journey has not to be undertaken. While thus the pampering, of which so much has been heard, might be modified in some measure, we must, for reasons already given, disabuse the reader's mind of the prospect of having breeding stock shown at national exhibitions so lean in condition as not to interfere with the procreative properties. In the very nature of things, there will be a certain amount of risk to breeding functions.

We know that, without very liberal feeding, a sheep will not display what is termed quality under the hand. Nor will, at least, the beef-making breeds of cattle, fill the eye or please the hand unless they are in high condition—not necessarily so fat as many that are now-a-days exhibited, but full of flesh and generously dealt with. Horses in general appearance benefit by high condition, but their action, legs, and feet derive no advantage from forcing diet, sometimes the reverse. Therefore, owners of horses should feed sparingly, seeing that action and limbs count for so much with most judges. They do, in the west of Scotland, where horse-rearing is better understood possibly than anywhere else, feed the one and two-year old Clydesdales, notably the former, moderately. There should be no occasion for pampering mares and stallions so hard as is usually done, but the evils are mitigated by the not over-luxurious fare bestowed on many of the animals in their youth.

The mainstay of the breeding stock exhibitions of the future is calculated to be those owners of pedigree or select animals who have not been very many years at the business, or have not been so long in the field as to have acquired very great celebrity. The bulk of the exhibitors are likely to be of this class, though breeders of world-wide fame will now and again put in an appearance, with the view of satisfying the public that their stocks are being fully maintained. Old breeders and exhibitors are now more independent of showyard advertisement, so to speak, than are those who have not been say twenty years in harness. The latter have more to gain than the former by exhibiting, so they can overlook the drawbacks. To many a herd just coming into public notice, a successful appearance in competition far outweighs in benefits any disadvantage which somewhat impaired breeding properties imply. A calf or a foal, missed now and again, or even a cow, heifer, or ewe brought prematurely to the butcher, is no doubt a sacrifice at first sight, but the benefits which prize winning confers on breeding stocks not already in the very front rank generally atones, when the market has to be faced for any injury that may have been directly done. Ruinously rich diet need not be enforced. It should not be so extensively as has hitherto been common, and well treated as we know the few specimens that are exhibited should be, there is no necessity for so much overfeeding as has been visible for many years.

Let us consider, then, under what circumstances breeders of pretty long standing should exhibit. If the breeder is a landed proprietor, with more to "come and go" upon than a rent-paying tenant farmer usually has, he may exhibit much more frequently than a farmer should attempt. Taking the case of a landed proprietor, occupying a considerative breadth of his own land, and owning a large pedigree herd, flock, or stud, we should say that he may, with no very serious loss to himself, and probably with some benefit to his tenantry and agriculturists generally, enter the national show contests every other year, if not in fact almost every year. The herd or flock being large, a few lots can be shown regularly without incurring great loss in breeding. In other words, there are tolerably full numbers retained at home in a healthy, sound breeding state, even though the exhibition lots were of little or no service as breeders, which is happily not the case. Old established breeders should not show even every second year representatives of their very best bred or most valuable pedigree tribes. They should prepare for exhibition some of the best-looking of their less valuable pedigree strains. Once a family or tribe has got its reputation made by showyard achievements, or by other means, and continues to occupy a prominent position in public estimation in the sale ring or private market, there is nothing to gain, but possibly something to lose, by exhibiting specimens of that tribe.

In the event, however, of that tribe displaying symptoms of losing popularity or market value as compared with other strains of the same race of stock, a little seeming sacrifice should then be made, and a few good specimens carefully prepared for the national society's annual battles. When this has to be done, we should advise breeders to avoid feeding hard early in the animal's life. Those very valuable pedigreed stock, worth hundreds of pounds a-head, should not be sent to a distant national yard before they are two years of age. If an animal—we write just now of the beef-making breeds of cattle—is sparingly fed as a yearling, and kept in full flesh the first half of the second year, it may be brought into pretty high condition during the four or five months which precede the date of the show at which it would appear as a two-year old. After the show a return to a moderate, though still nourishing, diet should take place. This practice is followed by some old breeders and experienced exhibitors with good results.

Of course, if every breeder, or nearly so, were to refrain from exhibiting cattle until the animals were two years of age and over, the yearling classes would become a blank. Well, we should rather that than witness the destruction for breeding purposes of so many animals as have fallen victims to overfeeding in their early youth. Usually the yearling classes of cattle, and often also of horses, are numerically the largest of all ages, especially at shows open to all comers. This we look upon as an unhealthy feature of modern live stock exhibitions. It demonstrates that the enthusiasm of breeders, their anxiety and eagerness to gain showyard honours, gets for the time the better of their regard for the breeding utility of their animals in the future. There is less mistake in the case of horses in Scotland at least, because excessive feeding is, as already explained not so common among young Clydesdales as in the cattle classes. But yearling shorthorns and polls should not be so numerous as they have long been at, for example, the Highland Society's shows. It frequently happens that one breeder enters two or three in the youngest class. Now, unless the animals are of altogether exceptionally high merit, and of no great value in the pedigree aspect, or are intended for immediate or very early sale, it is a mistake to exhibit more than one. From what has been penned a few sentences before, it may be concluded that we consider it a mistake to exhibit yearlings in any circumstances. We hardly go that length, but we are satisfied that if less than one-half the numbers now-a-days appearing in the juvenile classes were entered, the character of the shows would not seriously suffer, and the overfeeding grievance would be partially removed. If prizes are to be offered for yearling shorthorns and polls, it is to be hoped that breeders will have the good sense not to "force" on every promising youngster they have. A breeder who has his "name" to make—whose herd is only coming into fame—might fatten one really good yearling every other year, or as often as he has a first-class specimen not of the choicest of pedigree; but breeders of twenty or thirty years' standing should not pamper even for the sake, not to say certainty, of a prize, any of their valuable calves or yearlings.

Almost all societies offer smaller prizes for yearlings than for older classes. There are no doubt two reasons for that. One is, that the exhibition in a very high state of obesity of young breeding stock is not to be encouraged, and another is that it is not such a feat to win with an occasional youngster as it is with a more matured animal. We should probably say more matured in size rather than in fattening, because many of the yearlings presented at the national breeding stock shows are the primest of beef. That tends more to demonstrate the early ripening properties of the various breeds than it does to further the objects of breeding. Nevertheless, it may serve a salutary purpose, though it may perform in some measure what a fat stock exhibition is better fitted to accomplish.

The objects of this paper will be at least partially served if breeders of cattle are induced to fatten fewer of their stock for the showyard at an early age. We have endeavoured to prove that, though breeders were in this respect to hold in their hand very considerably, there would, in the ordinary circumstances attending young and rising breeders, be ample material forthcoming for the juvenile class; ample, we say, because it is not intended, and is certainly not desirable, that this class should be other than numerically the smallest in the yard. Two blacks, proverbially, never make a white; but it may be some, though very sober, consolation to us in Scotland, to know that we have not encouraged exhibition of breeding stock so early as the Royal Agricultural Society of England has done. Until last year, the "Royal" had a class for animals under twelve months, which simply meant unweaned calves. The classification in England has now been altered to the Scotch order, only that there are three classes of heifers in the former instead of two in the latter. The Scotch arrangement is infinitely the better, for this reason that heifers about the age of three in milk can perfectly well compete among cows, and no encouragement should be lent to the exhibition of animals under twelve months of age. Thanks, doubtless, to the classification which obtained at the leading English show prior to 1882, the tendency to exhibit calves of seven, eight, nine, or ten months is still strong. Of the fact that it is time that practice were stopped, probably no stronger evidence could be furnished than that few if any of the beasts so overdone as calves are able to pull to the front in after years. They are, indeed, not much seen or heard of afterwards. Our argument against very hard feeding early finds a by no means inappropriate illustration in the case of the shorthorn heifers of the Rev. Mr. Bruce Kennard, Marnhill, Dorset. His celebrated "Queen Mary," previously alluded to, was not brought out as a calf or under eighteen months old; his "Blossom 5th" was. The latter had a narrow run for first honours in the calf class at Carlisle Royal in 1880. She got second, and then lost a place the following year at Derby, while at the Reading Royal Show in 1882 she was only accorded a highly commended ticket. It was different with "Queen Mary"—not that the two were equally good beasts, but the one lost ground, whereas the other maintained it. This chiefly arose through "Queen Mary" not having been forced so early as the other.

When one looks calmly on, it should not require very great perspicuity to feel convinced that an animal fattened into the plumpest of beef ere it is in months out of its "teens," cannot, as a rule, continue for several years thereafter in good showyard condition, and breed satisfactorily at the same time. If the forcing goes on from the day of the calf's birth, as is not uncommon, the chances of decent public appearances in after years are reduced. In short, if you find beef where, age considered, you expect veal, disappointment is more than likely to follow both showing and breeding after the animal is three years old. In proof of this we might adduce many instances. For space's sake we shall only take one, and that is Lady Pigot's "Zedvesda." She was first yearling at the Bath and West of England Show at Croydon in 1875, and at the "Royal" the same year. Gradually thereafter she fell off, having had a narrow victory the following year, and by the time she reached three years she had gone considerably to pieces. As a breeder, too, she was a comparative failure, but in that respect she was far from alone among the animals fattened at high-pressure speed as calves and yearlings.

With regard to sheep, the fattening of lambs, if breeding is the object, is injurious to a stock; hence the fact that for lambs at the Highland Society's Shows prizes are offered only in the case of those hill-breeds, blackfaced and Cheviots, whose lambs are at the date of the exhibition not usually weaned. It may be doubted, however, if even these should be continued.* It is not good for the future of the lambs to have them in such high condition as the showyard specimens generally are. Early enough it may be to wean hill lambs in the last week of July, but an effort should be made to spare the youngsters of extravagant diet. Hitherto those intended for the showyard, along with their dams, get, in addition to arable land grass, corn and cake. This is not good for the ewes, but it is worse for the lambs, and suggests the propriety of withdrawing the prizes for lambs in breeding shows. It is different with fat shows. When the production of "lamb" or mutton as early and as economically as possible is the main object, as is the aim of such as the Smithfield and Birmingham Fat Shows, too much encouragement cannot be offered to young stock. Accordingly, the classes opened the other year for fat lambs at Smithfield have grown year by year in popularity and attractiveness. A great deal of really very prime mutton, not "lamb," has appeared in these classes latterly, notably those of the Hampshire Down variety. In fat shows, therefore, classes for lambs should be opened, of all the arable land and Down breeds of sheep, but not for hill stocks. In breeding stock exhibitions, the fewer lambs that appear the better.

In the case of pigs, somewhat similar remarks apply. It is not advisable to fatten young breeding pigs highly, but it has been observed that swine suffer less injury from obesity than some of the other varieties of stock; that is to say, the procreative qualities of a pig seem less affected by fat than are those of cattle, sheep, or horses. The pig, of all domesticated animals, is a feeder. It will get fat too on a diet that most animals would make but a very spare subsistence upon; nay, more, it will breed tolerably well in a high state of obesity, and it certainly has this to do in the case, at any rate, of national showyard prize winners. By the way, it may be mentioned that in Scotland the breeding and rearing of pigs has not yet received the attention it deserves or has been accorded in England. One result of this is, that the populous centres have to import the most of their ham and bacon; another is, that the breed of pigs in Scotland being of an inferior description—big boned and slow in maturing—a great deal of food is comparatively wasted on swine; while a third is that the display of pigs at the

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* Since the above was written, the Directors have resolved to withhold prizes for lambs this year at least.—EDITOR.

Highland Society's Shows is usually confined to a few exhibitors. That is not so in England. There is more competition, and, as a rule, finer animals in the pig classes at the national Englsih shows than at the Scotch. To the same extent this does not obtain in the other races of stock, which clearly proves that the common variety of pigs in Scotland is out of date. We know it is. If Scotchmen, much more numerously than has yet been the case, would introduce the best English sorts, such as the Berkshire and the medium-sized white breeds, a better return would be earned for the food consumed by swine and more interest; because better profits would be centred in Scotch piggeries. Both in pigs and in poultry Scotch farmers are lacking in taste and interest, which is a great mistake. Properly attended to, and well bred to begin with, pigs, as well as poultry, will pay the farmer or producer, though many practical farmers of the old school may be rather sceptical on this point. The fact is, that in Scotland farmers have been too apt to view pigs and poultry as nuisances rather than sources of revenue. One result of the lack of interest in these varieties of live stock has been that the old-fashioned breeds have not been supplanted by newer and improved sorts in the same degree as has been observable in the bovine and ovine species. Pigs and poultry, both in respect of breed and of housing, as well as diet, should receive more attention from Scotch agriculturists than they have hitherto done. If that were so, there would be less outcry about mischievous fowls and destructive swine than one still occasionally hears on a Scotch farm. In England and Ireland these branches of husbandry are better understood and practised; while for poultry-rearing France beats the United Kingdom, and for pig production America carries the palm for quantity though not for quality. English pigs, in the latter respect, would be ill to beat.

In conclusion, we may summarise the foregoing arguments and advocacies in the following terms:—

1. Shows of live stock have been decidedly beneficial to the agriculture of this or any other country in which they have been for a good many years in operation.

2. They are not now of quite so much service in Britain as they once were, but are still of sufficient utility to not only justify but demand the continued adherence of stock owners.

3. The national exhibitions are especially worthy of support. The local and district shows have become almost oppressively numerous, notably in Aberdeenshire, Ayrshire, Renfrewshire, and Lanarkshire. Two, three, or more of these should amalgamate, and thus save time, trouble, and expense to both exhibitors and visitors.

4. Local and district shows, however, being feeders of the larger gatherings, and affording as they do a chance of the exhibition

of stock in a comparatively moderate state of obesity, they should receive all reasonable encouragement, but should be reduced in number considerably in the north-east and south-west of Scotland, where they overlap each other in area, and where almost the same animals win at two, three, or even more shows, thus narrowing the interest in the meetings, and defeating to some extent the purposes of the exhibition.

5. Young breeders should not rush into the showyard with animals bred by other people, and bought at high prices; neither should they, when desirous of starting a herd, purchase first prize animals in a highly overfed state. Animals so selected generally lead to disappointment both in the showyard and breeding herd.

6. Noblemen and gentlemen, including rent-paying tenant farmers, who have in comparatively recent years begun pedigree stock breeding, should exercise a little more patience than many have done in the past regarding national showyard honours. They should exhibit sparingly for a good many years, and not feel depressed though they miss their mark several times at the outset. Their first object, however, should be to establish their herd in respect of breeding regularity. They may then show by degrees as they get a really good thing, and can spare it without ruining the herd.

7. Older breeders, who have by showyard performances and other means acquired for their stocks a high reputation and a good name, should not fatten for the showyard extensively. A few good lots now and again may be prepared to keep up the fame of the stock.

8. Animals not intended very early for the butcher, and coming before the public as breeding stock, should not be fattened to the highest pitch as either calves or yearlings, or so long as the beasts are growing.

9. Young breeders may fatten a few yearlings occasionally after they have got their stocks established, but old breeders, whose herds have already acquired fame, should not indulge in the pampering of yearling cattle or of lambs for the national showyards. Horses in Scotland are not so frequently overfed in youth as they are in England for the showyard. In both countries the colts and fillies are too fat at the age of three years for successful breeding; in England yearlings are fattened too hard for their legs, feet, and future work, apart altogether from breeding considerations.

10. With the view of endeavouring to grapple if possible with the overfeeding evils associated with national stock exhibition, a small committee, of say three practical men, might be selected to inspect the breeding stock at the leading shows as they enter the yard. The committee, however, would require to allow a considerable margin, as the same amount of visible

obesity does not apparently affect the breeding properties of two animals alike. Still some good might be done in this direction without any undue hardship.

11. Knowing as we do that animals cannot make a respectable appearance after undergoing the fatigues of a railway journey of hundreds of miles, unless they are in prime condition, we can hold out no hope of all risk to the procreative properties being obviated; but by the exercise of better judgment in the selection and preparation of the showyard specimens, and the fattening of rather fewer, especially of youngsters, the disadvantages of showing may be substantially reduced—may indeed be lowered to a tolerable magnitude. They are getting gradually nearer that stage as compared with a dozen years ago, not, however, so much through moderation in diet as from limitation of the number of animals which old established breeders nowadays fatten for national contests, and the absence of yearlings from some of the best known herds. But, as before indicated, much more might be accomplished in this direction with no material detriment to the exhibitions and positive gain to the breeders.

12. While thus British agriculture would not be quite itself without its annual live stock shows,—and must have them continued,—there is now less necessity for increasing the premium attractions than there is for devoting more of the societies' resources to the encouragement of other branches of agriculture, such as the propagation of new varieties of seeds and roots, the checking of manure and seed adulterations, and the encouragement of scientific investigation in the field.

13. Turning finally, and very shortly, to a comparison of the advantages and disadvantages of live stock shows, either breeding or fat, it will be gathered from what has been written already, that the former dwarf the latter in our estimation. Shows afford to breeders and feeders an opportunity which they would not otherwise possess, and to which they are not unfairly entitled, of displaying to the world the merits of their stock; they afford one exhibitor a chance of comparing his animals with another's; they enable farmers and implement makers to meet together in an open and fair field, and transact business which could not otherwise be done; they give agriculturists and their friends an opportunity of meeting at least annually, and of comparing notes of the year's work, as well as exchanging ideas on the engrossing topics of the time; and last, but far from least, they tend to impart a rivalry (which with its defects previously alluded to, can hardly be called unhealthy), alike among the producers of the finer specimens of the equine, bovine, ovine, and porcine races, and the manufacturers of the more modern and serviceable farm implements.

14. Against all those advantages, we have only the following

comparatively small drawbacks to set:—That the breeding properties of many animals are seriously impaired by the overfeeding by which modern national showyard preparation is characterised; that the fascinations of leading prizes in an open show, and the uncertainties connected with the getting of them, involve many a breeder in heavy expenses which he can ill afford; and that encouragement is given to the extravagant use of concentrated, costly foods, both in the preparation of breeding and fat stock, for their fate in the adjudicating ring.

15. Enough has been said and written to satisfy most people that the above disadvantages of the showing system, as developed in modern days, though not inconsiderable, are far more than counterbalanced by the benefits of shows, both to exhibitors and to the general public; and further, that British agriculturists, though not so dependent on shows as they were a quarter of a century ago, must still have their annual bucolic gathering and bestial competition.

THE BEST MODE OF PREPARING WOOD FOR FENCING WITH A VIEW TO ITS PRESERVATION.

By DAVID WATSON WEMYSS of Newton Bank.

[*Premium—The Minor Gold Medal.*]

THE very best quality of wood will begin to decay in a short time when exposed to the changes of the atmosphere. Timber, if kept constantly under water, will last a long time; and, on the other hand, if kept constantly dry, it will perhaps last nearly as long; but if exposed to the weather, where it becomes wet and dry alternately, it will soon decay. It therefore becomes a subject of great importance to know in what manner timber may be preserved in exposed situations.

It is considered that dry wood consists, on an average, of 96 per cent. of fibrous and 4 of soluble matter; but that the proportions vary somewhat with the seasons, the soils, and the plant.

If excluded from the contact of moist air, woody matter, like most of the other organised substances, may be preserved for an indefinite period. But if the woody matter be not protected against the action of air and moisture, the case is very different. By degrees its hydrogen and oxygen are disengaged, and the carbon predominates more and more. Thus the particles of the texture are disintegrated gradually, their white colour fades, and passes through all the shades till it becomes quite black. The cells of woody matter also contain different sorts of substances tending to disorganise, and these are mixed and modified in many different ways. Woody matter, being formed of one atom of carbon and one atom of water, as soon as it is submitted to the action of a somewhat elevated temperature, without the contact of air, experiences an internal reaction, which tends to separate the atom of water from the atom of carbon. The water is vaporised, and the carbon remains in the form of a black and granular residue. Now, if any means could be devised by which the substances in the cells of woody matter could be deprived of their tendency to disorganise when in contact with common air, wood may be rendered permanently durable.

All the varieties of timber grown in this country, as well as the Norway and American battens, which are imported, are those which are chiefly used for fencing purposes. Larch is the most durable, although well-grown Scotch fir, of good age and cut down in the proper season, is often used, and suits the purpose.as well, although not so durable as the larch.

All conditions being equal, the most resinous timbers resist decomposition the longest; also, the older and more compact the grain of the timber, the longer it will last when exposed to atmospheric influences,—therefore, in the first case, pine and larch timber lasts longer than non-resinous trees. From the amount of resin in the Scotch pine, it will no doubt last longer than foreign timber creosoted.

The kinds of trees already mentioned last much better than the ash, poplar, beech, and other deciduous trees; and in this case the heart-wood of trees is more durable than the sap-wood. Taking these two things, therefore, into consideration, if we try to get these two qualities into the timber; we will succeed to a certain degree.

In the case of home-grown timber intended for fencing purposes, the first and most important matter is to have the trees cut down at a proper season, which is from November till January, when the leaves have faded and the sap down. When the wood is cut into rails, they ought to be laid flat in piles one above another on level ground, and kept as straight as possible, and from twisting, which they are liable to do, and which is very inconvenient when the fence is being put up.

Sometimes wood fences are made of the small or thinnings of plantations, the trees being split up the middle, but this is not a durable sort of fence, as the rails are often too heavy for the nails to hold any length of time; also, the bark being on the trees, prevents the effect of any substance or substances which may be applied for its preservation, besides being a harbour for wet and vermin.

When timber is decaying by dry-rot, it will be found to be connected with the growth of a small plant in the wood belonging to the tribe of fungi. It feeds upon the sap and grows very fast; and by its rapid growth, and by removing all the sap from the wood, the timber very soon becomes brittle. This plant also spreads rapidly, but a good free circulation of air often prevents it. What the true cause of dry-rot is, has never been determined, but it frequently shows itself by a species of mildew, which covers the timber, and the action of which apparently causes the wood to decay and crumble down into powder. The mildew, however, is neither the dry-rot nor its cause, but its effect. It is distinctly seen by the microscope to be a fungus; and as the fungus itself is so minute as to require the aid of the microscope to be distinctly seen, its seeds may be supposed to be so very minute as to be taken up by the spongeoles of trees. But, whatever may be the cause of dry-rot in timber, there is no doubt of the fact that simply steeping timber in a solution of corrosive sublimate preserves it from dry-rot. After it is subjected to this process, it is requisite that it should have free access of air, which it is sure to have when the timber is applied to fencing purposes.

Whatever other causes may combine to promote the decomposition of wood by dry-rot, or other forms of decay, there can be no doubt that imperfect seasoning, by leaving in the pores of the timber a large proportion of the fermentable juices always found in recently felled timber, is one of the most important, and therefore that good seasoning is as essential in promoting the durability of wood as it is in lessening the tendency to those changes of form and bulk which so greatly increase the difficulties of the carpenter and joiner.

The process of seasoning usually consists simply in the exposure of the timber to the action of air in a dry situation, in stacks or piles so constructed as to allow the free circulation of air in contact with as much as possible of the surface of each piece of timber, until the sap or vegetable juices shall have dried up so far as to offer no facility for the germination of the fungi which constitute various kinds of dry-rot. In order to the success of this operation, it is important that the pile of timber be so far elevated from the ground as to allow the circulation of air beneath as well as through and around it; and also that, if exposure to rain be not entirely avoided, care be taken to prevent the lodgment of moisture in any place where it would be likely to remain long.

Dead oil or pitch is a first class article in filling up the pores of timber, as it possesses the qualities of resin. It first coagulates albuminous substances; second, absorbs and appropriates the oxygen in the pores, and so protects from cremacausis; third, resinifies in the pores of the wood, and thus shuts out both air and moisture; and fourth, acts as a poison to the lower form of animal and vegetable life, and so protects the wood from all parasites. All these properties specially fit it for impregnating timber exposed to alternate states from wet to dry, as indeed some of them do for situations constantly wet.

The cheapest and best composition for coating over wood fencing is coal-tar, lime, and resin,—in the proportion of ¼ bushel slaked lime and ½ lb. resin to 4 gallons coal-tar,—then boiled in a pot for an hour, and kept well stirred while on the fire. This applied to fences, either posts or rails, in a hot state, with brushes made for the purpose, will be found an effectual coating for preserving the wood against all weathers and seasons. If this coating is applied every two or three years, the fences will last for many years.

Coal-tar is allowed to be very superior to vegetable tar, and its efficacy in resisting the worm is attributed to its containing sulphocyanic acid, which is highly destructive to animal and vegetable life. It is necessary, however, to observe that the coal be deprived of its ammonia, which would produce immediate decay if thrown into the timber.

The protecting power of metallic oxides, when applied to the surface of wood in the form of paint, is well known; and many abortive schemes for the preservation of timber have been devised to act upon the same principle, which is that of excluding such external influences as might promote decay. Wood, when painted, is not preserved from the effects of the weather, as the ingredients in paint—namely, white lead and oil—have no power to do so. Still ornamental, upright fences—that is, wood cut to measurement and dressed—are generally painted all over, and when this is attended to, and renewed annually, it will remain fresh for many years. To imperfectly seasoned timber, however, such applications are worse than useless, because by filling up the pores they impede the natural drying of the vegetable juices, and therefore rather promote than check natural decay. Far more efficient than these are the numerous modes of protection which involve the impregnation of the timber with some antiseptic substance, or with such matters as, by pre-occupying the pores, may render the reception and germination of destructive fungi mechanically impossible.

The creosoting of railway sleepers has of late years been generally adopted by railway companies in this country, with more or less success.

The system of creosoting is to subject the timber, along with dead oil or pitch, to a pressure, varying from 100 to 200 lbs. per square inch, for about ten or twelve hours. This is done in large iron tanks, and from 10 to 12 lbs. of the oil is thus pressed into each cubic foot of the timber. The cost of the process is about 4d. per cubic foot.

There is very good reason to think that the state of the timber previous to its being creosoted has much to do in its after preservation; for example, timber creosoted in a green state cannot take in the oil so effectually as that which has been previously properly seasoned.

Timber used for fencing purposes, when creosoted, has been found to last a long time; some years after posts have been inserted in the ground, they have been found to be as fresh as when first inserted.

Of plans for protecting timber by impregnation, one in particular has attained general celebrity. The preservative agent in this process is bichloride of zinc, commonly called "corrosive sublimate," which is dissolved in water, and forced into the pores of the timber in closed tanks, by means of forcing-pumps, and which combines with the albumen of the wood, and converts it into a compound capable of resisting the ordinary chemical changes of vegetable matter. Chloride of zinc, creosote, obtained from the distillation of tar, oil of tar, and other bituminous matters containing creosote and pyrolignite of iron, have also been successfully used.

Another system of preserving timber is to dissolve 1 lb. of blue vitriol in boiling water, and then mix it with five gallons of water, and have the timber steeped in the mixture for a few days.

THE BUYING AND VALUING OF MANURES.

By Dr. A. P. Aitken, Chemist to the Society.

Among the many advances made in agriculture during recent years, there is none more important than the use of artificial manures and feeding stuffs as a means of increasing the fertility of the soil and the production of the farm. Since the introduction of the use of bones and guano, not much more than forty years ago, the number of concentrated manures, the quantity purchased, and the area over which they are employed have gone on rapidly increasing. The importation of manurial substances into Scotland at the present time cannot be set down at less than 100,000 tons annually, and the manufacture of the raw material into manures suitable for application to the various soils and crops of the country has given rise to a vast industry, in which an enormous amount of capital is employed.

The amount of money spent by the farmers of Scotland in the purchase of manures cannot be reckoned at much less than one million sterling annually, and everything which tends towards a more profitable investment of so large a sum is a direct gain to agriculture.

It would be very useful if accurate statistics were obtainable of the amount and character of the manures employed not only over the whole country, but also in the different districts of the country where special conditions of soil and climate prevail, and where various systems of agriculture are practised. We should thus learn what are the kinds of manures which experience has shown to be best suited to the circumstances of each district, and from a special study as well as a general survey of the details thus supplied we should obtain a better grasp of the subject of manuring, and be able to point out more confidently the directions in which farmers variously situated might with benefit modify their practice.

The nearest approach to a means of obtaining such information is to be found in the returns now being annually made to the Highland and Agricultural Society by analytical associations throughout the country. Most of these associations have been in existence for only a few years, but they have already been very beneficial, and their number is steadily increasing as their utility is becoming better known. Their chief object is the protection of their members against the purchase of manures and feeding stuffs inferior in quality or exorbitant in price, and the success which has already attended the operations of the older associations is attested by the excellence of the materials purchased by their members and the favourable terms they are able to obtain.

The manner in which an analytical association is constituted and conducted is somewhat as follows:—The farmers in a district pay into a common fund a small subscription of from 5s. to 10s. annually, or it may be a small assessment of about 2s. 6d. per 100 acres of arable land occupied by them, and the fund thus provided is chiefly expended in the payment of analyses, in defraying the cost of the publication of analytical reports, instructions, schedules, and other literature connected with the work of the association. Besides the usual office-bearers, a committee is appointed to superintend the sampling of manures, &c. When manures are bought by members of the association they are sampled in the presence of witnesses, according to prescribed regulations, and the samples are sent to the secretary. These, or a selection of them, according to the amount of the funds, are sent to the chemist for analysis. In an old-established association the probable number of analyses required is known, and the funds are regulated accordingly. Each sample as it is received is analysed, and a printed slip is sent to all the members intimating the purchase, the guaranteed and found analyses, the names of the buyer and the seller, the price at which bought, and the value as determined from the results of the analysis. By these means all the members of an association are immediately informed of the quality and value of the purchases made by any one member, and are therefore guided in making their own purchases.

This method of procedure, beneficial as it is, is by no means perfect, as it does not entirely prevent the occurrence of unfortunate purchases, and it will be seen in the sequel that such purchases, made through the agency of analytical associations, are far from rare.

Another system of buying, which is simpler and less expensive in its method, and at the same time more satisfactory in its results, is practised in some districts. This is the co-operative or club system. Neighbouring farmers, whose wants are somewhat similar, meet together and intimate what are the kinds and quantities of manures and feeding stuffs they purpose buying. The total amount of each kind of material is determined, and various manure merchants are invited to quote the prices at which they are willing to supply these. The merchants send in their offers, along with samples of their stuffs and their guaranteed analyses. The samples are numbered and sent to a chemist, along with the guarantee and price of each.

The chemist, without making a chemical analysis, carefully examines the samples, and applies a few qualitative tests to prove their genuineness. He gives his opinion of their relative excellence, and determines their relative values. Guided by his report, the farmers make their selection, and having made a careful contract of purchase, so as to prevent any misunderstanding or risk of loss if the bulk should not turn out equal to the samples, the purchases are made through the medium of one of their number acting as secretary for the time. When the goods are delivered, samples are drawn in the presence of witnesses and sent to the chemist to be analysed. On receiving his report, the conditions of purchase are implemented, and cash paid within a month from the date of delivery. By this means the best manures in the market are able to be bought on the most favourable terms, no expenses are incurred in connection with the association, the number of analyses required is reduced to the minimum, and the cost of these to each of the buyers is a mere trifle. But the greatest advantage gained by this mode of procedure is the almost perfect protection which it affords against the making of unfortunate purchases. In ordinary circumstances, the chemist is employed to discover mistakes after they are made, and his report usually comes too late to permit of the mistake being remedied.

The usefulness of the work in which analytical associations are engaged was brought under the notice of the Highland and Agricultural Society two years ago, and its assistance and patronage were requested to enable the associations to carry on their operations more efficiently. The Society answered their appeal in the most liberal manner, by granting from its funds a large annual subsidy, by framing a set of regulations for the better attainment of the objects they have in view, and by supplying the materials of a working scheme, and accepting the responsibility attached to the carrying out of its provisions.

The details of the Society's scheme are to be found in this volume of the *Transactions* (Appendix B, pp. 17 to 28).

Certain modifications have this year been introduced into the scheme so as to increase its usefulness and render its clauses more easy of application. The Society's table of unit values, by which members may discover from the results of analyses what are approximately the commercial values of manures, will also be found there, and a short description of the chief manures in the market, and hints for their application have been added.

A careful perusal of these will be found useful to all who purpose buying manures.

The advantages offered by the Society's scheme are not confined to members of analytical associations, but are extended to all members of the Society who wish to purchase their manures and feeding stuffs according to the Society's regulations. A copy of these regulations and schedules for each manure and feeding stuff purchased are forwarded on application being made to the Secretary, and all that is required is that the schedules be accurately filled up and returned before 1st November each year. It is hoped that members of the Society in all parts of the country will avail themselves of the opportunity afforded by the Society's scheme of protecting themselves against the loss too frequently sustained from the purchase of inferior and exorbitantly priced manures.

The annexed table is a list of the analytical associations who last year made returns to the Society, the kinds of manures and feeding stuffs purchased by them, and the number of samples of each kind towards the payment of whose analysis the Society has contributed its grant.

In the last two columns are shown the total numbers of samples for which returns were made in the two years during which the Society's scheme has been in operation. On comparing these two columns, it is seen that there is a slight diminution in the number of analyses last year. In the report upon the returns for 1881, published in last year's volume of the *Transactions,* Appendix A, p. 30, a hope was expressed that the number of analyses would considerably increase; but accidental circumstances have prevented a large number of returns from being received, and no doubt also the depressed state of agriculture has considerably diminished the number of purchases of artificial manures throughout the country. In every other respect an improvement is noticeable, which shows that the recommendations contained in last year's report have not been disregarded.

		Alford.	Buchan.	Caithness.	Annandale	Inverness.	Kincardine.	Lanark.	Orkney.	Strathearn.	Easter Ross.	Wester Ross.	Kelso.	Total 1882.	Total 1881.
Standard Manures.	Bones, . . .	4	8	3	2	3	2	5	1	2	5	3	7	45	33
	Dissolved Bones, .	1	3	9	8	11	1	7	5	8	2	1	3	59	65
	Superphosphates, .	2	5	3	1	4	2	...	1	5	3	...	6	32	30
	Peruvian Guano, .	1	...	2	1	1	2	1	1	1	...	...	1	11	14
	Ichaboe Guano, .	...	...	...	...	...	...	...	...	...	...	...	1	1	2
	Fish Guano, . .	1	...	...	...	...	...	1	...	...	...	...	1	3	3
	Dissolved Guanos, .	...	...	...	...	1	...	1	...	...	...	...	...	2	5
	Ground Phosphates,	...	...	...	...	...	...	...	...	...	1	...	1	2	2
Special Manures.	Turnip Manures, .	1	...	...	...	...	...	4	1	...	...	...	...	6	14
	Potato Manures, .	...	...	...	...	...	...	1	...	...	1	...	...	3	10
	Miscellaneous, .	...	...	...	1	...	...	2	...	8	...	2	...	13	9
Salts.	Nitrate of Soda, .	...	...	...	...	...	...	1	...	2	...	...	1	4	1
	Potash Salts, . .	...	...	...	...	...	...	2	...	2	...	...	2	6	7
Feeding Stuffs.	Linseed Cake, .	3	...	...	...	...	...	...	...	...	...	...	7	10	19
	Cotton Cake, . .	...	...	1	...	...	...	...	...	...	...	...	3	4	4
	Compound Cakes, .	...	...	...	...	...	...	...	...	...	...	...	1	1	3
	Total,	13	17	18	13	20	7	25	9	28	12	6	34	202	221

There were fourteen analyses disqualified in 1881, on account of the want of a sufficient guarantee, while last year there were only five. It cannot be too strongly urged that the obtaining of a sufficient guarantee with every manure and feeding stuff purchased is absolutely necessary, in order to prevent disappointment and loss in the purchase of these materials. A farmer may be able to trust his experience, his powers of discrimination, or intuitive perception, so far as to induce him to buy a horse without a guarantee of its soundness, or to engage a servant without a character; but these guides will avail him little in buying a manure without a guarantee, or a "pig in a poke," for the two transactions are of a very similar order. There are some manures, such as crushed bones, where to a certain extent "seeing is believing," but these are usually manures in a form which it is not economical to apply. The best manures are those in the finest condition, so finely ground or dissolved that their particles cannot be judged by the eye, nor their composition determined by ordinary superficial tests. Even chemists and manure manufacturers, who have hundreds of manures passing through their hands, trust their powers of observation to the most limited extent. Fineness of division and excellence of manufacture are no doubt matters of observation, but qualitative tests beyond the sphere of ordinary observation, and quantitative analysis which is the special province of the chemist, are required to enable one to pronounce an opinion on the value of a manure. In some respects, the more one can see in a manure the less valuable it is, and the presence of recognisable lumps of material, especially in a dissolved manure, ought to be considered a disqualification rather than otherwise. But farmers who are guided by observation, naturally give the preference to a manure containing something that they can recognise. They also like to see a manure as light in the colour as possible, though that has absolutely nothing to do with its value. Some of the richest manurial substances are very dark coloured, and bone char, which is often used as a constituent of the highest class superphosphates, is perfectly black. Yet it is found that a light-coloured superphosphate commands a higher price than a dark-coloured one of equal or even of greater value. Farmers are apt to judge manures somewhat in the same way as they would judge grain, hay, or straw, and give the preference to that which has the "finer" colour. These are fancies that only mislead, and do harm in various ways. They form a temptation to manufacturers to bait their manures with a sprinkling of bone, which gives them a fictitious value, and no one can blame them for so doing, as it is not their business to instruct the farmer; their business is to make whatever sells best, to cater for the farmer's wants, and he wants to see a few bits of bone. The preference for light-coloured manures does harm in two ways,—by causing substances to be added to manures which improve their colour without improving their quality, and in restricting the use of dark-coloured materials of good manurial value.

It is right that farmers should see samples of the manures they buy, but they should not be guided too much by appearances, which are apt to be deceptive, and they should also remember that in many cases small samples are apt to be better than the bulk, for in the process of sampling the texture of the manure is considerably but unavoidably improved. A chemical analysis is required, in order to prove the value of a manure, and the obtaining of a sufficient guarantee is the only way to prevent loss from the purchase of a manure which analysis shows to be of inferior quality. But the important question arises—What is a *sufficient guarantee?* In the reports before us, there is abundant evidence that this is a thing not well understood. Many of the guarantees are expressed in such a way as to give no security to the purchaser, some are very ambiguous, and it is usually found that the ambiguity is of such a kind as to make the manure appear more valuable than it really is. There can be no doubt that farmers are misled by such guarantees. One might hesitate to go so far as to affirm that such reports were drawn up with the deliberate intention to deceive, but it is a notable circumstance that in almost all cases where misleading guarantees are employed, they are attached to manures which combine high price with low manurial value.

The very various ways in which chemists have been accustomed to express the results of their analyses, has undoubtedly had the effect of preventing farmers unskilled in chemistry from more rapidly acquiring a correct estimate of what is meant by a sufficient guarantee. It has tended to prevent farmers from making use of analyses as a test of their manures, because they know that if they received a chemist's report, they probably should not be able to understand it. One analysis is to them just as good as another, and one unfortunate result of this is that worthless wares are sometimes foisted on the farmer under guarantee of analyses full of chemical jargon, with an imposing array of figures to the second place of decimals, which tend to conceal rather than to disclose what is their true character.

Considerable latitude must no doubt be given to chemists in their methods of analysis, and also in their methods of stating their results; but as there are only a few things in a compound that are of value to a farmer, and whose amount he wants to know, it may reasonably be required of chemists that they should single out these constituents, and express them in a way which farmers can understand. The method of stating analysis adopted by the Society, and recommended for the use of its members, is to be found among the regulations of the Chemical Department (Appendix B, p. 26). By this method the constituents of a manure or feeding stuff that are of practical value are put separate from the body of the analysis, and expressed in the manner which is best understood by farmers and manufacturers. What is meant by a *sufficient guarantee* is an analysis expressed in that manner.

As examples of what analytical guarantees ought not to be, one or two of the guarantees supplied last year to members of analytical associations may be quoted.

A sample of bone meal supplied to the Lanarkshire association was found to contain—

Phosphate of lime, . . .	41·76 per cent.
Ammonia, ...	4·68 ,,

The guarantee was—

Phosphate of lime, . . .	44 to 53 per cent.
Ammonia, ...	4·50 to 5·50 ,,

The phosphate of lime is below the guaranteed minimum fully 2 per cent., but it is more than 11 per cent. below the maximum. The seller is not bound to supply anything beyond the minimum, and one is naturally led to inquire what the use is of the maximum of 53 per cent., if only 44 per cent. is really guaranteed. It looks like a temptation to the buyer to try his luck. He is asked to pay for 44 per cent., with a chance of getting 53 per cent. He is asked to pay for 4·50 per cent. of ammonia, with a chance of getting 5·50. The analysis shows how far these fine chances were from being attainable. If such a guarantee has any legitimate meaning, it ought to mean that if the bones were found to contain the minimum of 44 per cent. phosphate, it would be because the nitrogenous matter mixed with them would be greater, and the ammonia would be 5·50 per cent. On the other hand, if the maximum phosphates were obtained, the ammonia might fall to 4·50 per cent., but the analysis shows that a compensatory fluctuation of that kind was in this case impossible, for the ammonia turned out just about the minimum, and the phosphates somewhat under it. It is difficult to see why bone meal, which is a riddled and well mixed manure, should be sold under any such a fluctuating guarantee.

A proper guarantee ought to state the minimum percentage only, for nothing beyond that is really guaranteed.

To take another example;—a sample of dissolved bones supplied to the same association was found to contain—

Phosphate of lime, dissolved, ...	18·32 per cent.
,, ,, undissolved, . . .	8·88 ,,
Ammonia, ...	1·38 ,,

It was guaranteed to contain—

Phosphate of lime, dissolved, . . .	20 to 25 per cent.
,, ,, undissolved, . . .	8 per cent.

Nitrogen equal to from 4 to 6 per cent. sulphate of ammonia.

Here the "soluble phosphate" falls below the minimum, and there is not even the feeble compensation of a corresponding increase in the insoluble phosphate, which one is entitled to expect in such a case. The nitrogen in the manure is expressed as equal to 4 to 6 per cent. *sulphate of ammonia.* Why was it not expressed as *ammonia* according to the common practice? If it was because sulphate of ammonia was added to the manure, then why call it "dissolved bones?" The figure expressing the sulphate of ammonia is nearly four times as great as that of the ammonia which it contains, and farmers who may not know the exact difference between ammonia and sulphate of ammonia, are apt to be deceived by such a method of expression.

A proper guarantee should have all its nitrogen expressed in the form of *ammonia,* and in no other way, as that is the term that is now best understood.

Another misleading form of guarantee is that in which several constituents are grouped together, chiefly under the name of the one that is most valuable, though probably present in the smallest amount. Thus, in a mixed manure sold to the Strathearn Association, there is guaranteed 8 per cent. sulphate of ammonia and potash, but the analysis shows only 0·76 per cent. ammonia, and 3·78 per cent. potash. If these two constituents are converted into sulphates, the total amount is more than 8 per cent.; but from the manner in which the guarantee is given, it is evident that the purchaser would expect four or five times as much ammonia.

A guarantee which is quite a curiosity in its way is one supplied with an article called "Vitriolised Dissolved Bone Manure," but which turns out to be really a superphosphate. It is guaranteed to contain "about 30 per cent. phosphates nearly all rendered soluble, besides salts of ammonia, chlorides, and sulphates." The analysis shows ammonia to be present only to the extent of 0·1 per cent., viz., 1 part in 1000, and yet it is guaranteed to contain "salts of ammonia." Either the manufacturer must have forgotten to put the bone or the ammonia salts in, or the guarantee is a sham. The presence of chlorides and sulphates is also guaranteed; the former a useless and accidental constituent, and the latter a constituent which must of necessity form more than half the weight of a manure with 30 per cent. phosphate rendered soluble by sulphuric acid. It might be thought useless to guarantee such constituents, but it evidently has a use, for the manure was sold at more than double its value. The seller seems to have had his doubts regarding the efficacy of the manure, for attached to the guarantee is the shrewd remark, "This manure may be advantageously used with Peruvian guano." One might as reasonably advertise chaff as an excellent feeding material, with the recommendation that it should be given along with a liberal supply of oats and beans.

These are a few examples of insufficient guarantees, and it may be as well to state here in a sentence what a sufficient guarantee of a manure is. It is a written or printed statement telling in precise figures what is the smallest amount of each of the really valuable constituents of a manure.

The valuable constituents of ordinary manures are—

Phosphate of lime, dissolved.
Phosphate of lime, undissolved.
Ammonia.
Potash.

Farmers who wish to secure themselves against unfortunate purchases, should make themselves quite familiar with these terms, and should reject any manures whose guarantees are not expressed in these precisely, and in numbers indicating the percentage of each.

To return to the consideration of the table showing the number and kind of manures supplied to the associations in 1881 and 1882.

Despite the decrease of one-tenth in the total number of manures, there is a large increase in the number of samples of bone meal. The high average quality of the purchases in 1881 may have contributed to that result, but no doubt the depressed condition of agriculture and the consequent diminution in the number of live stock, caused a corresponding scarcity of farm-yard manure, and therefore an increased use of bone meal as a preparation for the turnip crop was found necessary. The quality of bone meal in 1882 is 50·3 per cent. phosphate and 4·3 per cent. ammonia, a little below the numbers of the former year, which were 51 and 4·4 per cent. respectively The average price was £7, 19s., and the average value by the Society's units for the year was £8, 3s.

The number of samples of dissolved bones is less than before. The average quality is good, viz., 20 per cent. phosphates dissolved, 13 per cent. undissolved, and 2¼ per cent. ammonia. That is the kind of analysis one would expect to find if the manures were pure dissolved bones, but an inspection of the analyses of the samples shows, as before, that about one-third of the manures sold under the name of dissolved bones could not have been produced by dissolving bones in sulphuric acid, and probably only a mere fraction of the whole were pure dissolved bones. The name "dissolved bones" has now become a general name for all manures more or less resembling dissolved bone in composition. They are, in fact, ammoniated superphosphates, and they may or may not contain some bone. It matters little to a farmer whether they do or do not, and as before remarked, the less bone one sees in them the better. An ammoniated superphosphate is the manure of the future, no matter how it may be named. It is the most useful kind of manure for most purposes, containing as it does the ingredients which a farmer wants most—soluble and insoluble phosphates and ammonia. So long as the manure is well dissolved, it is of no importance to a farmer what its origin is, and the cheaper the sources from which its materials are obtained, and the lower the price at which it is sold, so much the better for him. The ease with which a manure having the composition of dissolved bones can be manufactured from cheaper materials, and the difficulty, we might say the impossibility, of determining by analysis or otherwise the genuineness of a sample of dissolved bones, take away from the manufacturer any inducement to make the genuine article. Further, when we consider that the imitation is probably quite as good from an agricultural point of view, it is evident that farmers would consult their own interest by ceasing to inquire into the purity of dissolved bones, and paying an increased price for the name of the thing, when they have no means of knowing that they are being supplied with the reality. Some samples of dissolved bones contain potash salts, which are added to them by the manufacturer, so as to give them the character of a general manure. The average price at which dissolved bones were sold to the associations last year was £7 per ton, and the average value, according to the Society's units of valuation, was £6, 3s. per ton, showing that an average of 17s. per ton has been paid in excess of value, and that mainly on account of the charm associated with the term "bones."

There is an increase in the number of superphosphates sold to the associations last year. One-third were first class, containing 30 per cent. or upwards of dissolved phosphate; one-third were second class, containing between 25 and 30 per cent.; and one-third contained less than 25 per cent. dissolved phosphate. Dissolved phosphate, no matter from what source, is of equal value as a manure, and the farmer who buys superphosphate intelligently will buy the superphosphate which gives him most dissolved phosphate for his money. By applying that test, he will probably find that the superphosphate at the lowest price per ton is the dearest of all. This is proved very conclusively by the purchases made last year. The first class superphosphates were bought at an average price of £4, 14s. per ton, and that is just their value by the Society's units; but the third class superphosphates were bought at an average price of £4, 5s. per ton, while their average value was only £3, 9s. per ton. The highest class superphosphates bought last year were thus the cheapest in the end; but when we consider the cost of the material from which these are made, the difficulty of manufacturing them, and the care required in their subsequent handling, it is probable that a second class superphosphate is the one which can be bought most advantageously.

There is a diminution in the number of samples of Peruvian guano, owing no doubt to the scarcity and consequent dearness of that manure. Most of the samples fall somewhat below their guarantee in ammonia, and although the prices are high, yet they are not extortionate, except in one notable instance of a manure called Phospho-Peruvian guano, which was sold to the Orkney Association at £3 per ton above its value. The quantity of Peruvian guano in the market this year is very small, and the price is so high as to make it impossible for farmers to use it with advantage, except to a limited extent for special purposes. It is probable that next year there will be an increased supply of that manure in the country, but it is unfortunately quite evident that in a year or two the supplies of Peruvan guano will be exhausted.

One marked feature of the returns for last year is the great decrease in the number of special manures. The severe terms in which it was found necessary to refer to the inferior composition and exorbitant price of many of these manures in last year's report has, no doubt, contributed towards their diminished use amongst members of the associations. It is satisfactory to observe that a decided improvement is noticeable in the composition and price of the special manures bought last year. Nearly the half of these were bought at prices which might be considered fair and reasonable, whereas in the former year not one quarter of the purchases deserved that character. It seems, however, that there are still some manure merchants who are slow to learn the lessons conveyed in the report of last year, and who persist in selling their special manures at prices which cannot fail to be disastrous to farmers who use them to any considerable extent. Nearly the half of these manures, bought through associations last year, were sold at prices more than £2 per ton above their fair value. No one who knows the difficulties and risks which manure manufacturers have to contend with would wish unduly to diminish their margin of profit, but when it is found that some manufacturers or merchants are wont to sell their mixtures at prices from 20 to 60 per cent. beyond those which firms of reputation consider sufficiently remunerative, it is time that farmers were put upon their guard.

In last year's report the purchases made by the Kelso and the Strathearn Associations were contrasted in order to show how great was the difference in the prices paid by experienced and by inexperienced buyers. A similar contrast might now be made from the returns before us. The manures analysed for members of the Kelso Association have again almost all been bought at prices considerably below their values as determined by the Society's units of valuation, while those of the Strathearn Association are nearly all far in excess of their values.

Of the eight special manures recorded, there is only one whose value approximates to the price; the remaining seven were sold at an average of £8, 10s. per ton, cash price delivered, while their value did not average more than six guineas, including a fair profit to the seller. The composition of some of these manures also falls far short of their guarantees, and some of the guarantees are of the worst description.

It was hoped that the terms in which the Strathearn purchases were referred to last year would make the buyers in that district more cautious, and also serve as a warning to sellers not to overstep so far the bounds of moderation in their prices. Unfortunately these hopes have not been realised, and the Directors of the Society feel compelled, not without reluctance, to publish the full details of some of these purchases.

The purchases made by the Strathearn Association are not the only ones that might be quoted from the returns made this year as illustrating the need that exists for greater intelligence and discrimination in the purchase of manures. There are others in which the prices paid for the manures and the real values of the goods show even greater discrepancies. The Annandale Farmers' Club tell us of an overcharge of £3 per ton on a manure worth only £5 per ton, and a purchase is recorded by that Association where £13 per ton was paid for a manure which upon analysis was found to be very deficient in quality and worth only a little over £6 per ton, and we are further informed that the manure "proved useless on the land." Owing, however, to the want of that strict care and attention to *minutiæ* which are required in making purchases, and to a certain amount of looseness in the operations of the Association, the Society refrains from publishing the details of these transactions, lest, in so doing, it might do injury to the sellers, who explain that in the former of these transactions the price has not been quite accurately stated, and in the latter that there may have been an error made in sampling,—that, although the sample was drawn in the presence of their agent, yet there was a possibility of its having been taken from another lot of manure that was on the premises at the time.

Exorbitant prices have also been paid for some manures by members of other associations, but in many cases it has been found that the Society's regulations have not been carried out to the letter, and that some flaw in the matter of the guarantee, the sampling, the valuing, or other condition of purchase has occurred, which makes it impossible for the Society to take special notice

MANURES PURCHASED BY MEMBERS OF STRATHEARN ANALYTICAL ASSOCIATION.

Assoc. No.	Name of Manure.	Guarantee.		Analysis Found.		Price* per ton	Value.†	Purchaser.	Seller.
			p. cent.		per cent.	£ s.	£ s.		
19	Vitriolated dissolved bone manure,	"About 30 per cent. phosphates nearly all soluble, besides salts of ammonia, chlorides, and sulphates."		Soluble phosphate, Insoluble phosphate, Ammonia,	23·36 7 00 0·10	8 10	4 0	Mr. Taylor, Roundlaw, Auchterarder.	John M'Callum, Crieff Chemical Manure Works.
12	Grass manure,	Insoluble or bone phosphates, Sulphate of potash, Nitrogen, equal to sulphate of ammonia,	5·00 12·50 33.75	Insoluble phosphate, Potash, Ammonia,	10·76 5·24 4·80	10 0	6 10	Mr. Mackie, Invermay.	William Ramsay, Eden Mill, Cupar-Fife.
11	Ammonia phosphate,	Soluble phosphates, Insoluble phosphates, Ammonia,	14·00 12·00 5·00	Soluble phosphate, Insoluble phosphate, Ammonia,	6·88 14·42 3·25	7 0	5 5	Mr. M'Lagan, Willimston, Madderty.	Messrs. Fraser, Gordon, & Co., Glasgow.
21	Ammonia phosphate,	Soluble phosphates, Insoluble phosphates, Ammonia,	14 00 12·00 5·00	Soluble phosphate, Insoluble phosphate, Ammonia,	5·77 15·58 3 34	7 10	5 5	Mr. M'Laren, Drumharvie.	Do.
25	Dissolved bones,	"About 30 per cent. phosphates nearly all rendered soluble, about 4 per cent. salts of ammonia, and 6 per cent. chlorides and sulphates."		Solubple phosphate, Insoluble phoshate, Ammonia, Potash,	17·53 3·00 1·78 2·19	8 0	5 0	Mr. Taylor, Roundlaw, Auchterarder.	M. B. Brown, Cairntyne Chemical Works, Parkhead, Glasgow.
18	Turnip manure,	Soluble phosphates, Insoluble phosphates, Salts of ammonia, potash, and magnesia,	24·00 4·00 8·00	Soluble phosphate, Insoluble phosphate, Ammonia, Potash,	22·00 2.00 1·94 2·81	9 0	5 15	Mr. Mackie, Invermay.	Do.
29	Turnip manure,	Soluble phosphates, Insoluble phosphates, Salts of ammonia, potash, and magnesia,	24·00 4·00 8·00	Soluble phosphate, Insoluble phosphate, Ammonia, Potash,	22·97 3·06 0·85 2·62	9 0	5 0	Mr. Millar, Upper Cairns, Forteviot.	Do.
24	Bone manure,	Soluble phosphates, Insoluble phosphates, Nitrogen=ammonia,	22·00 6·00 1·70	Soluble phosphate, Insoluble phosphate, Ammonia,	20·94 6·85 1·83	7 10	5 5	Mr. Taylor, Roundlaw, Auchterarder.	Peter Malcolm, Auchterarder.

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* These represent "Cash prices delivered," except No. 11, which is cash price at Glasgow.

† These represent "Cash prices, carriage not included."

of them. It was evident, from the nature of some of the replies received to inquiries regarding these purchases, that the Society's regulations were not sufficiently understood by some of the secretaries of associations. In order to prevent any misconception in future, the regulations have been revised and arranged in such a manner as to make them more easily understood and applied, and, although the Society's grant has this year been allowed in almost every instance in which application was made, it has been resolved that hereafter no grant shall be made for any analysis, unless the conditions of purchase are strictly in accordance with the published regulations.

It is under the heading of "special manures" that the greatest deficiencies and the most extravagant prices are to be found. There is a natural expectation that, because they are sold under special names, they must have a special value; but, as a rule, that is far from being the case. The true special manure is the manure which a farmer finds by experience to be most suited to his needs, and a little experience will teach him that the special manure he wants can be made from the commonest materials.

When a farmer requires a mixture to be made for his own special use, and when that mixture differs somewhat from the composition of the ordinary manures in the market, and when the quantity he requires is small, it stands to reason that it cannot be supplied on the same terms as ordinary manures requiring no special attention, or as mixtures ordered in large quantity, and on that account special manures are apt to compare unfavourably with the ordinary standard manures in the market. The trouble and expense entailed in their manufacture require that they should be sold at a relatively high price, but when this extra cost is taken account of it will be seen that the prices at which special manures are sold are usually far in excess of their value. Not unfrequently they cost half as much again as they are worth, and in some instances their price is more than double their fair value. It is well that farmers should be impressed with this fact, and that they should be made aware that they can effect a considerable saving by buying the materials they wish to have in their mixtures at the ordinary market prices, and mixing up the few tons they require at their own farms.

The number of purchases of feeding stuffs made through the associations last year was little more than half that of the year preceding. Owing to the mildness of the winter, the success of the turnip crop, and the general abundance of "keep" in the country, the demand for feeding stuffs in 1882 was comparatively small. Linseed cake, as usual, formed the bulk of the feeding stuffs purchased, and almost all the samples analysed were of good quality.

The quality of linseed cakes and other feeding stuffs, if in good condition and wholesome, depends on the amounts they contain of three constituents, viz.,albuminoid matter, oil, and carbo-hydrates. By albuminoid matter is meant such substances as gluten of wheat, legumin, and other vegetable compounds which resemble white of egg and dried flesh in their composition. They are popularly known under the name of "flesh-formers," while the oils and carbo-hydrates are known as "fat-formers" and "heat-producers." The term carbo-hydrates includes such substances as starch, sugar, gum, and allied substances. The average composition of the linseed cakes analysed for the associations last year was 27 per cent. albuminoid matter, 10½ per cent. oil, and 37 per cent. carbo-hydrates. This does not include three samples of cake supplied to the Vale of Alford Association, which were of inferior quality. In these cakes the albuminoid matter averaged only 21 per cent., and in one of them that constituent was 7½ per cent. below the guarantee.

The usual guarantee given with a feeding cake is that it is "pure," or that it is "genuine," and sometimes it is guaranteed as "pure and genuine." One would suppose that a guarantee of that kind ought to be sufficient, but it is well known to analysts that linseed cakes guaranteed "pure" may vary widely in their composition and feeding value.

The value of a feeding cake chiefly depends upon the amount of albuminoid matter it contains, and that is precisely the constituent which is most liable to fluctuation. Among the samples of linseed cake sold to associations during the last two years, and guaranteed pure, the amount of albuminoid matter ranged from about 16 to 30 per cent. There is an enormous difference in the feeding value of cakes whose composition ranges so widely, but we look in vain to find any corresponding variation in their price. The prices do vary considerably, but these variations bear no relation to the real value. In 1881 the best cakes were sold at a little over £9 per ton, and the worst ones at £10 per ton. Last year the discrepancy was even more marked; the best cakes were sold at a little over £8 per ton, and the poor cakes, already referred to, were sold at £10 per ton. It is quite evident that there is great need of reform in this matter, and in view of the direction in which our agriculture is tending, it is very important that an intelligent method of buying and an equitable system of valuing feeding stuffs should speedily prevail. While it is no doubt true that the best test of a feeding stuff is the practical test, and that a stuff which has apparently the composition of a good feeding material may be unpalatable or difficultly digestible, or may contain within it substances which are innutritious or even positively injurious, yet it is equally true that when none of these disqualifications exist, but where the materials are good and wholesome, the value of a feeding stuff depends upon the amount which it contains of the three valuable constituents above referred to, and that is a matter which can be discovered by ordinary chemical analysis. That being the case, it is evident that feeding stuffs should be purchased on the basis of analysis, and seeing that the words "pure" and "genuine" are frequently applied to cakes of inferior feeding quality, a sufficient guarantee of a feeding stuff ought also to state the percentages of albuminoid matter, oil, and carbo-hydrates which it contains.

It is right that the guarantee "pure and genuine" should be obtained with feeding cakes, but it must be remembered that absolute purity is not to be found in these substances, and it is only when the impurities exist to a considerable extent that they cease to be considered pure in a commercial sense.

The relative values of these three constituents of a feeding stuff are not capable of very strict numerical definition. Whether regarded from a feeding or from a commercial point of view, their relative values are liable to fluctuate considerably, according to varying conditions which need not be here enumerated or discussed. It will be sufficient for the present purpose to accept, as regards linseed cakes, the relative values adopted for their valuation by most of the agricultural associations on the Continent, and to consider the albuminoid matter and the oil to be each about four times the value of the carbo-hydrates per unit. If we consider the carbo-hydrates as worth one shilling per unit, and the other two constituents as worth three shillings and ninepence each per unit, and calculate the values of the linseed cakes analysed for the associations last year, on that basis it will be found that the values obtained come very close to the market prices in most instances. The only purchases whose values vary considerably from their price, are the three lots purchased by the Vale of Alford Association at £10 per ton. Their value, according to these units is from £8 to £8, 10s. per ton.

There is very little difficulty in arriving at unit values by which to determine approximately the commercial value of linseed cakes, but that cannot be said of other cakes and feeding stuffs, the supply of which is small, and whose quality and price are very variable.

In concluding this review, it is expedient that a few words should be said explanatory of the position which the Society has recently assumed towards its members and the members of analytical associations in the matter of the purchase of manures and feeding stuffs.

The purchase of these materials has become a necessity of modern farming, and the enormous amount of money expended on them has already been referred to. It has long been felt that in using them farmers are in the unfortunate position of not being sufficiently acquainted with their nature and value, and of having to rely in great measure on the knowledge and also on the integrity of those that supply them.

The experience of recent years has proved only too truly the need that exists of a great extension of that knowledge amongst farmers, and the care that requires to be exercised by them in order to secure themselves against the purchase of worthless or exorbitantly priced materials. The great development of the manure industry and the rapid changes that are occurring in the nature of the supply make it almost impossible for farmers to keep abreast of the progress of the times, and it has become of paramount importance that some sort of direction should be available for their guidance, and some control established for their protection. The Society has for many years endeavoured to supply the former of these wants in work of its Chemical Department, but until recently all measures of a protective kind were left to local enterprise. For the encouragement of local efforts in this direction, the scheme referred to in the former part of this report was inaugurated two years ago. A money grant in aid of the cost of analyses formed the basis of the scheme, but the conditions and regulations attached to the obtaining of the grant are such as to secure for the associations who accept them an immensely greater advantage than is expressed in the comparatively small amount of money which the grant contributes to their funds. The Society's regulations, if faithfully carried out, secure for the associations a uniform and efficient method of procedure, and what is still more important, it secures for them the powerful aid of the Society in the attainment of the end they have in view—the economical purchase of manures and feeding stuffs.

These latter advantages the Society also offers to all its members who choose to comply with its regulations.

An important part of the system of control now established is that which deals with the valuation of manures. The want of an authoritative and generally adopted system of valuing manures has long been felt. Various analytical associations have been accustomed to publish annually some method of valuation for the use of their members, but the methods adopted were not uniform, and the value ascribed to a manure varied considerably according to the method of valuation used. While some chemists declined to put a value on manures, rightly considering it to be no part of a chemist's business to do so, others were in the habit of affixing values according to methods of their own, which might or might not be openly explained. To put a stop as far as possible to these anomalies, as well as to enable it to carry out its own scheme, the Society now publishes annually a table of unit values, by the use of which the approximate commercial prices of manures may be calculated from the results of analysis. The framing of such a table is a matter of no ordinary difficulty. Owing to the variety and complexity of the manures now in use, and the ingenuity exercised in their manufacture, it is extremely difficult to devise a method of classification and valuation which shall do justice to all good, honestly made manures, prevent all spurious imitations from being included in that category, and be at the same time capable of being easily understood and applied. Such a system of valuation, if attained and generally adopted, would not only serve as a guide to farmers, but would also be directly advantageous to all manufacturers of genuine and high-class manures. The scheme of valuation issued this year (see App. B, p. 27) endeavours to supply the requisites above referred to, and the Chemical Committee have to acknowledge the assistance which it received from the representatives of the manure manufacturers in adjusting some of its terms. It is a part of the conditions attached to obtaining the Society's grant, that no other system of valuation than this shall be used by associations in valuing their manures. Notwithstanding the great care which has been taken in framing this scheme of valuation, it is possible that in some rare cases it may be found to operate disadvantageously on some well-made manures, and the Chemical Committee will be glad to receive any well-considered suggestions for the removal of these disadvantages if they are found to exist.

Considering how intimately the success of modern agriculture is concerned in the profitable purchase, as well as the economical application of artificial manures, no apology is needed in recommending to the careful attention of all members of the Society the details of the scheme which forms the subject of this report, and in inviting their co-operation in accomplishing the objects it has in view.

THE PRACTICAL METHOD OF TESTING SOILS, WITH REPORT OF EXPERIMENTS IN VARIOUS PARTS OF SCOTLAND.

By Dr. A. P. AITKEN.

MUCH as may be learned from field experiments if carefully conducted towards a definite end, no matter in what locality, it is well known to all experienced farmers that certain kinds of soil require special treatment, and that what may be good treatment for one soil may possibly be the worst for another. Heavy carse lands, dry sandy shore lands, and wet high moor lands require methods of treatment as distinct as the nature of the soils themselves. But it is not so well understood that just as the nature of the soil, and the conditions of climate determine the methods of agriculture and the kind of crops that can be grown with advantage, or can be grown at all, so they ought to determine the kind of manurial treatment that is most profitable, or that may be practised with any possibility of profit. There are certain forms of manure which are better suited for some soils and climate than for others, and money spent in manure may be profitably invested if spread on one kind of land, and be thrown away and lost upon another. It is mainly on this account that manurial experiments are frequently so diverse in their results, and that experimenters who regard the manure as everything are frequently so far astray in their conclusions. There are many questions of general interest which may be answered by experimenting on one soil, and the results obtained may frequently be capable of universal acceptance; but when the question to be answered is that one which each farmer asks himself, "What are the best forms of manure for this district?" he will require information of a much more specific kind than can be obtained from experiments conducted in districts widely differing in character from his own. General principles regarding manures and manuring will be of use so far as they go; but they will not go far enough for his special wants. When he still further narrows down his inquiry by asking himself what every farmer ought to ask himself, "What is the kind of manure that my land stands most in need of?" he will look in vain for a sufficient answer from any experiment conducted outside of his own farm.

But if he ask the question of his own soil, and ask it in a proper manner, he will get precisely the information he wants. The method of asking such a question is by no means difficult, and it is by no means new. All that is necessary is that he should select a uniform piece of land of average quality, and divide it into five, six, or seven equal parts, and apply to them definite quantities of the manures regarding which he wants information, and having done so note carefully the results.

In former reports I explained how this might be done by means of a "five-plot test," and last year a few farmers in various parts of the country put the test in practice. Schedules containing the results of some of these experiments have now been returned, and, though the facts which they record were intended principally for the information of individual experimenters, yet it is evident, from a careful examination of the results, that they are capable of yielding information of more than special interest.

The five-plot test was a small experiment to determine whether phosphates, potash, or nitrogenous matter was most needed on the soil, and for this purpose five adjacent ridges were chosen, and about 50 yards measured off and manured in the following manner:—

Plot 1. Phosphate alone.
2. Phosphate and potash salts.
3. Phosphate, potash salts, and nitrate.
4. Potash salts and nitrate.
5. Nitrate alone.

In some cases a sixth plot was marked off, to which none of these manures were applied. The quantities of manure used were comparatively small, and the whole cost was a mere trifle. In some cases the phosphates were applied in two forms, and for this purpose the plots with phosphates were divided into two equal parts, A and B, the latter receiving ground mineral phosphate, and the former the same quantity of phosphate made into superphosphate.

These experiments were undertaken by various agricultural associations and also by independent experimenters. The Ross-shire farmers were first in the field, and set about the work in a very thorough-going manner. They formed themselves into a club called the "Ross-shire Field Experiment Club," with Sir Kenneth Mackenzie of Gairloch as president, Dr. Bruce, Dingwall, as vice-president, and a committee consisting of some of the leading farmers of the county. The five-plot test was tried on fourteen different farms very variously situated, and from a personal inspection which I made of a number of those farms last September, I know that the whole experiment has been done with the greatest care, and that the results given on pages 254 and 255 are quite reliable.

The experiment was tried also at Kinnahaird and Lenaig, but, owing to the prevalence of finger-and-toe, the results were not considered trustworthy. At Teaninich the crop was late of being lifted, and as the bulbs were considerably damaged by frost, the results were not recorded.

Each one of these experiments when carefully examined affords direct information regarding the relative want of the soil for each of the three manurial constituents applied, and points out to the farmer in what proportions they should be applied so as to produce the best effect. Each particular case requires to be discussed from its own point of view, and various circumstances require to be considered in order that the results may be correctly interpreted. They are subjects which would provide interesting materials for discussion amongst local farmers, who are well acquainted with the farms where the experiments were tried, and much benefit would be derived from a careful consideration of the circumstances of each case. Nevertheless,

Ross-shire Field-Experiment Club.

Plots.	1			2			3			4			5			6		
Superphosphate,	3 cwt.			3 cwt.			3 cwt.			...			...			Nil.		
Kainit, . .	...			1 cwt.			1 cwt.			1 cwt.			...			...		
Sulphate of ammonia, . .	...			...			1 cwt.			1 cwt.			1 cwt.			...		
DAVIDSTON—	T.	C.	Q.	T.	C.	Q.	T.	C.	Q.	T.	C.	Q.	T.	C.	Q.	T.	C.	Q.
Bulbs, . .	16	11	1	15	18	1	18	8	1	16	5	0	19	13	3	17	3	3
Tops, . .	3	2	2	3	2	2	3	2	2	4	3	3	3	8	2	3	15	0
ST MARTINS—																		
Bulbs, . .	13	5	0	11	10	0	13	1	1	10	10	0	9	11	0	8	7	2
Tops, . .	0	18	3	2	15	2	1	11	3	2	3	2	2	13	3	2	5	2
CROMARTY MAINS—																		
Bulbs, . .	14	5	0	12	15	1	14	16	2	17	4	0	15	3	3	15	8	1
Tops, . .	3	2	1	3	1	1	2	17	3	3	8	1	4	6	1	3	19	2
FYRISH—																		
Bulbs, . .	15	17	2	15	10	0	18	5	0	13	10	0	13	10	0	11	15	0
Tops, . .	3	15	0	3	5	0	3	16	3	2	15	1	2	15	2	2	11	2
ARDULLIE—																		
Bulbs, . .	14	15	0	18	5	0	18	0	0	19	0	0	17	10	0	17	15	0
Tops and Tails,	6	0	0	5	5	0	7	0	0	5	0	0	6	10	0	7	0	0
ARABELA—																		
Bulbs, . .	22	11	3	21	8	3	23	10	1	17	10	1	17	5	3	17	14	2
Tops, .	4	17	2	5	8	1	6	8	3	6	3	1	6	8	0	5	15	2
CORNTOWN—																		
Bulbs, . .	12	6	3	13	19	2	13	7	0	7	11	0	8	1	0	4	15	3
Tops, . .	1	5	1	1	6	2	1	2	3	1	0	1	1	2	2	0	19	0
DUNGLASS—																		
Bulbs, . .	13	13	3	17	12	2	20	7	2	17	18	0	14	0	2	16	15	1
Tops, . .	2	15	3	4	0	0	4	0	0	3	17	3	3	6	1	3	3	2
CONON MAINS—																		
Bulbs, . .	15	15	0	16	0	0	17	12	2	17	15	0	18	17	2	15	7	2
Tops and Tails,	4	0	0	5	12	2	4	12	2	7	15	0	8	7	2	11	2	2
MEIKLE TARELL—																		
Bulbs, . .	26	3	0	26	12	3	29	8	2	27	6	1	17	18	1	...		

EXPERIMENTS (TURNIP CROP) 1882.

General Manure.	Crop.	Soil.	Remarks.
Per Acre.	Date of Sowing.		
22 loads dung in drills	Swedes, 31st May	Sandy loam	"Potash depression," retarding ripening. Nitrogen most required.
22 loads dung in drills	Yellows, 24th June	Good black land	"Potash depression." Phosphates most wanted.
24 loads dung in drills	Yellows, 24th June	Inferior black loam	"Potash depression."
15 loads dung in drills	Swedes, 8th June	Light, thin, sandy loam	Potash not required. Phosphates most required.
15 loads dung in drills. (Formerly the manures were superphosphates, bonemeal, and guano.)	Swedes	Good black land	Great need of potash.
20 loads dung in autumn	Yellows	Carse land	"Potash depression." Phosphates most required.
25 loads dung in autumn.	Yellows, 30th June	Light sandy loam	Phosphates most required. Dung much washed during winter. Drill dunging recommended.
8 cwt. ¼-inch bones	Yellows, 15th June	Deep free loam	Great need of potash. Nitrogen in bones too slow. Ammonia salts seems to have been washed down through porous soil.
None	Yellows	Sandy loam	Phosphate plots soonest ripe, therefore least leaf. Potash not required. Nitrogen most required.
None	...	Deep black land, in high condition	Potash not required. Nitrogen beneficial.

there are some questions of general interest which are raised by the details before us. It will be seen that in many cases where potash was applied its effect was far from beneficial. It frequently tended to diminish the crop, and exerted a depressing influence on the other manures applied. Where the crop on plot 2 is less than on plot 1, and that on plot 4 is less than on plot 5, we must conclude that this diminution is directly due to the application of a potash manure. I have used the term "potash depression" to express that result, and it will be seen that its occurrence is very frequent. It seems to occur chiefly in those cases where farm-yard manure was applied in the drills, and is felt in a less degree where the land was dunged in autumn. In the cases where potash was beneficial, it is usually where bones were applied, instead of farm-yard manure. The weight of turnip tops varies considerably, and it is also noticeable that where potash was applied its effect has been to increase the proportion of tops to bulbs; the plant has grown more to leaf, and the natural interpretation of that peculiarity is that potash has had the effect of retarding ripening. It is conceivable that in the case of a very mild winter the bulbs might have longer continued growing on these plots; but the early advent of severe weather last winter has prevented us from observing any good effect of that kind. Future experiments may yield information on that point; but, so far as last year's experiments are concerned, the effect of potash on the turnip crop has been an injurious one.

The crop on Ardullie forms a notable exception, however, and a further inquiry into the circumstances of that experiment affords information which perhaps explains the anomaly, for I find that farm-yard manure was applied to the turnip crop last year for the first time, and that formerly the turnip manure consisted of superphosphate, bone meal, and a little guano. These substances contain little or no potash, and it is evident that the effect of that treatment would be to unduly diminish the store of potash in the soil.

The depressing effect of potash on the turnip crop is brought out still more strikingly in the returns made by other experimenters in the Lowlands. These are given on page 257.

The phosphates in these experiments were applied in two forms,—as superphosphate and as ground mineral phosphate. The ground phosphate was applied in the form of the finest flour, and the quantity of phosphate was exactly the same in both forms. It will be seen that in some cases the ground phospate was a very good manure, but in the great majority of cases the superphosphate produced a heavier crop. As a rule, however, the increase due to dissolving the phosphates was not very striking, and it is probable that if the two forms of phos-

Five-Plot Test.

		1	2	3	4	5	General Manure.	Crop.	Soil.	Remarks.
Superphosphate,	per acre	4 cwt.	4 cwt.	4 cwt.						
(or ground mineral)	,,	(2)	(2)	(2)						
Potash salts, . .	,,	...	1 cwt.	1 cwt.	1 cwt.					
Nitrate of soda, .	,,	...	...	1 cwt.	1 cwt.	1 cwt.				
		tons cwt.	tons cwt.	tons cwt.	tons cwt.	tons cwt.				
Boon Lauder, . (Dr Gibb), . .	super mineral	24 4 25 4	23 4½ 23 10½	23 13½ 23 9	23 0	23 18	Bone meal, 3 cwt. per acre	yellows	Good turnip soil	"Potash depression." Mineral phosphates rather better than super-phosphates.
,, . . ,, . .	super mineral	12 9½ 13 4	12 12 12 18	16 1½ 14 14½	15 8	19 7	Do.	yellows	Poor thin clayey soil	Soil rather unequal, improving from 1 to 5. Potash not required. Nitrogen most wanted.
Thirlestane, Lauder, (Mr R. S. Bruce),	super mineral	22 19 21 13½	20 8 19 15¼	25 10 25 10	19 15¼	21 0½	Bone meal, 4 cwt. per acre	yellows	. .	"Potash depression" very marked. Phosphates most wanted.
Wanton Walls, Lauder, (Mr Runciman),	super mineral	14 0 16 0	14 0 15 0	18 0 17 0	18 0	21 0	.	..	...	"Potash depression." Nitrogen most wanted.
Hollybush, Galashiels, (Mr Walter Elliot),	super mineral	19 0 18 0	18 10 18 0	19 0 17 10	15 0	18 10	No farmyard manure	yellows	Fair light turnip soil	"Potash depression."
Faldonside, Galashiels, (Mr R. H. Gibson),	super mineral	20 12 18 5	19 1 18 15	20 10 21 6	21 3	20 12	12 tons dung on stubble	yellows	Medium clay	"Potash depression." Potash slightly beneficial, with mineral phosphates.
Ladyrig, . . (Mr Roberton), .	super mineral	29 14 25 18	25 14 28 3	27 14 35 3	29 14	27 15	15 loads dung in drills	..	Light black moorland	"Potash depression." Phosphates most wanted. Potash beneficial with mineral phosphates.
Newhall, Galashiels, (Mr A. T. Elliot),	super mineral	20 5 20 0	20 10 18 5	22 0 20 5	19 10	17 0	Turnip manure	yellows	Friable red soil.	Phosphates most required. "Potash depression."
,, . ,, .	super mineral	21 5 18 5	20 0 18 5	19 0 18 15	17 7½	15 15	15 loads dung in drills	swedes	Light black moorland	Phosphates most wanted.
Markinch, . . ,, . . .	super mineral	19 17 18 2	19 17 18 17	22 3 19 11	20 0	18 18	Dung in drills	yellows	Medium loam	All three ingredients beneficial.
,, . . . ,, . . .	super mineral	17 18 16 5	19 18 19 10	24 3 20 8	22 7	22 11	No dung but dbl. quantity exp. manures	yellows	Medium loam	
Greenburn, Reston, (Mr Caverhill) .	super mineral	15 8½ 15 18½	16 12 16 4¼	17 0½ 16 9	16 19½	16 6	No other manure	. .	Light soil on sandy subsoil	All three ingredients beneficial.

phate had been applied on the basis of equal money value, the ground mineral would have held its own with the superphosphate.

The potash depression already noticed is very general, and in some instances very marked, and it is apparent that a very important fact has been brought to light by these experiments. An extended set of experiments, to test still more thoroughly the effect of potash on the turnip crop, is evidently much wanted, and I hope that many farmers will be found ready to co-operate with the Society this year in investigating that subject. Sets of manures to be applied to the twentieth part of an acre will be prepared this season for that purpose, and will be forwarded at small cost to all who are willing to join in the experiment, and full instructions regarding their application and schedules for noting the results will accompany them.

It is sometimes said by those who apply potash to the turnip crop, that it is not so much for the sake of the turnips themselves that the potash is given, as for the sake of the crops which follow.

It is probable that the potash so applied may be found beneficent to the next white crop, and perhaps to the succeeding crop of grass, and that it may tend to increase the clover of that crop, but it is evident that any advantage of that kind may be as easily attained by applying potash salts after the turnips are lifted, whereby any injurious effect on the turnip crop may be avoided. It is desirable that the effect of potash should be tested in every way; that it should be applied to land dunged in the drills and in autumn, and also to land where no dung is used for the turnip crop. There is an indication in the experiments above noted, that potash salts do best where bones are used, perhaps better with ground mineral phosphate than with superphosphate, and that their depressing effect is less noticed on land dunged in autumn than on that which has been dunged in the drills.

Another experiment was tried last year by various farmers, to determine the relative advantage of applying bones in a coarser or more finely ground condition. The returns received regarding that experiment are not numerous, but they all point in one direction, viz., that the finer ground bone meal is the quicker manure. It is desirable that that experiment should be repeated, and a set of manures for that purpose will also be prepared.

In conclusion, I will only remark that the value of applying a practical test to the soil, to enable it to tell its own manurial wants, has been amply borne out by the results of last year's experiments. It is evident also that a seven-plot test would be better than the five-plot test above described. The object of reducing the number of plots to five was to save trouble to experimenters, but this year the number will be seven, and will include in addition to the above plots one with phosphate and ammonia, and a nothing plot. In order to diminish the trouble to experimenters and also the cost (though that is a small matter), the size of the plots this year will be one-twentieth of an acre.

EXPERIMENTAL STATIONS—REPORT FOR 1882.

By Dr. A. P. AITKEN.

REVIEW OF RESULTS DURING FIRST ROTATION.

THE progress of the experiments at the Society's experimental stations has formed the subject of an annual report in these pages, and the details of some of the more important parts of the general scheme have been annually described with considerable minuteness. Now that the results of a complete rotation have been obtained, a fitting opportunity presents itself of taking a general view of the main facts pointed out by the experiments.

The experiments were begun with one chief purpose, viz., to determine the relative crop-producing value of the various forms of phosphates, nitrogenous manures, and potash manures in common use. One or more of these constituents are usually present in all artificial manures, and the value of the manure depends not only on the amount of each of these constituents which it contains, but also on the form in which it exists. What is the form of phosphate, the form of nitrogenous manure, the form of potash salt which produces the best crop of turnips, of barley, of hay, of oats? These were the questions to be answered by the experiments.

The main thing to be attended to in laying down a scheme of experiments for that purpose is to secure that every plot receives the same actual amount of phosphoric acid, nitrogen, and potash, and that the only respect in which there is any difference is in *the form* in which these are applied. The manner in which this object has been attained will be seen by referring to the tabular statement on page 276.

The experiments are conducted on two stations, differing greatly in their soil, situation, and climate. The one is at Pumpherston, 12 miles west of Edinburgh, a thin, clayey loam, resting upon "til," and 400 feet above the level of the sea; the other is at Harelaw, 12 miles east of Edinburgh, a deep, rich, marly loam overlying limestone, not 100 feet above the level of the sea, and about half a mile from the shore. The climate of these two stations is very different; the former is in a moist, cold, late district, and the latter is comparatively dry and mild.

The four-course rotation of turnips, barley, grass, and oats is employed at both stations, and both have had exactly the same manures applied to them, viz., the artificial manures expressed in the "scheme," and no farm-yard manure.

We may now consider the information which has been conveyed by the experiments in these two stations, and begin with the different forms of phosphatic manures. These are—(1) bone ash, a substance of animal origin, and which has been thoroughly burned; (2) ground coprolite, a substance of animal origin, but petrified and altered during a geological epoch; (3) bone meal, consisting of the bones of land animals, and scarcely at all altered; (4) phosphatic guano, of animal origin, consisting of the dung of sea-birds, from which everything soluble has been washed away; and (5) ground mineral phosphate, a stony and frequently crystalline substance, which may or may not have been originally derived from some animal source. These substances represent the five great classes of phosphatic manures, and they have been used on the stations in two ways—(1) as finely ground as possible, and (2) after being dissolved with sulphuric acid.

PUMPHERSTON.

No. of Plot.		1878.		1879.		1880.	1881.	
		Turnips.		Barley	Straw.	Unmanured Hay. 1st Crop.	Oats.	Straw.
		GROUND PHOSPHATES.						
	Per Acre.	Tons.	Cwts.	Lbs.	Cwts.	Cwts.	Lbs.	Cwts.
1	Bone ash, . .	20	8	1588	27	26	1516	29
3	Ground coprolites,	20	9	1605	27	24	1390	27
5	Bone meal, . .	16	2	1177	21	25	1571	23
7	Phosphatic guano,	20	0	1386	28	23	1823	27
9	Ground mineral phosphates, .	18	17	1268	24	23	1700	24
	Average, .	19	3	1405	25¾	24⅕	1600	26
	DISSOLVED PHOSPHATES.							
2	Bone ash, . .	19	7	1688	26	24	1933	30
4	Ground coprolites,	22	3	1650	28	21	2054	30
6	Bone meal, . .	20	3	1683	29	24	2133	29
8	Phosphatic guano,	21	6	1600	30	21	2136	30
10	Ground mineral phosphates,	20	17	1592	30	20	2118	28
	Average, .	20	15	1643	28¾	22	2075	29½
	Increase over undissolved phosphate, . .	1	12	238	3	...	475	3½
11	No phosphates, .	12	1	1036	23	22	1813	24

HARELAW.

No. of Plot.		1878.		1879.		1880.	1881.	
		Swedes.		Unmanured Barley.	Unmanured Straw.	Unmanured Hay. 1st and 2d Crop.	Oats.	Straw.
	GROUND PHOSPHATES.							
	Per Acre.	Tons.	Cwts.	Lbs.	Cwts.	Cwts.	Lbs.	Cwts.
1	Bone ash . .	14	16	2074	30	35	2764	30
3	Ground coprolites,	15	0	2260	32	38½	2551	30
5	Bone meal, . .	13	7	2468	32	41½	3438	29
7	Phosphatic guano,	15	7	2432	32	33¾	3366	30
9	Ground mineral phosphate, .	15	7	2224	30	31½	3458	28
	Average, .	14	15	2292	31	36	3115	29½
	DISSOLVED PHOSPHATES.							
2	Bone ash, . .	16	2	2320	36½	39½	3676	36
4	Ground coprolites,	15	16	2156	34	41¼	3664	36
6	Bone meal, . .	15	1	2332	36	44¼	3652	34
8	Phosphatic guano,	16	9	2332	36	39	3248	37
10	Ground mineral phosphates,	16	9	2402	36	39¼	3708	36
	Average, .	15	19	2308	35½	40¾	3589	36
	Increase over undissolved phosphates, . .	1	4	16	4½	5¼	474	6½
11	No phosphates, .	13	2	2147	34	33½	3324	34

The preceding tables show at a glance the crops produced at each station by these five forms of phosphates, both in the finely ground and dissolved conditions.

Before comparing these figures, it should be observed that no manures were applied in Harelaw station during 1879, and on either stations in 1880, for reasons which were explained at the time. The results of these years are expressed in smaller type.

In the first place, we have to note that phosphates, whether ground or dissolved, have increased the crop considerably, the result in every case being higher than on plot 11, where phosphates were withheld, and only the nitrate of soda and potash salts applied in common with the other plots. On the fertile soil of Harelaw the differences observed are not so great as at

Pumpherston, where the crop is more dependent on the manures immediately applied to it.

The best crops are produced on the plots manured with dissolved phosphates. The only exception is the hay crop at Pumpherston in 1880, but that is partly explained by the fact that the manures were withheld that year, and the small store of fertility in that soil had been somewhat severely drawn upon by the two preceding crops. With that exception, the dissolving of the phosphates has had the effect of increasing the crops to the extent of from 8 to 20 per cent. We have heard much of late years regarding the superiority of ground phosphates over dissolved phosphates from an economical point of view, and their use has been loudly advocated, but the results obtained on the Society's stations during the first rotation do not support that opinion. Other experiments performed in co-operation with the Society have produced results which prove sufficiently that on some soils the use of ground phosphates, so far from being economical, is simply ruinous. Nevertheless, there are not wanting instances where ground phosphates produce good results, and are to be recommended; notably on soils where there is a superabundance of organic matter, and to a less extent on light sandy soils. In this as in all other cases the important thing to consider is the character of the soil. No one who has any real experience of manuring will recommend the application of manures irrespective of the nature of the soil. Much, no doubt, can be done to alter the character of a soil, to improve its texture and its fertility by the use of manures, but there are well-marked limits to this practice beyond which, in an agricultural sense, it would simply be extravagance and folly to go. There are certain manures which are suited to certain soils, and capable of being employed with advantage on them, just as there are systems of agriculture and systems of cropping which are determined by the nature of the soil, and none but those who have money to lose can afford to despise the lessons which the soil teaches. There are other circumstances, such as climate, which materially affect the action of manures, and call for care and judgment not only in their selection, but also in the method of their application.

A very well marked distinction between the crops obtained with ground and dissolved phosphates is the evenness of the crops produced by the latter form of manure. The differences between them are comparatively trifling, and this circumstance gives powerful support to the opinion that all phosphates, if dissolved, are of equal efficacy as manures.

There is another important difference in the crops produced by these two forms of phosphates which is not apparent in the figures before us, but which has been constantly noticed in the progress of the experiments. The crops grown on the plots to which dissolved phosphates were applied were always the earliest. The barley and oats on these plots were ready for cutting from a week to ten days earlier than on the others. This is a very important fact, and it is of especial importance to those who are farming in late districts, where the delay of a week or a fortnight at harvest may mean the loss of harvest weather, and consequent damage to the crop. Taught by the lesson afforded by these experiments, I last year recommended the use of superphosphates to an upland farmer for the production of an early white crop, and he applied it to the half of his oat break. The result was that that was the only part of his crop he was able to secure in good condition.

If we now examine the produce obtained from the plots manured with ground phosphates we find that great differences exist. In 1878 bone meal produced the smallest crop at both stations, but especially at Pumpherston, whose more tenacious soil is less favourable to the decay of bony matter than the more porous soil of Harelaw. This also conveys a useful lesson. It shows that bone meal does best in free open soils, where air and moisture can easily get at it to rot it, or rather to enable it to rot by favouring the life and work of the living organisms that convert it into a form suitable for feeding the plant. The further soil departs from this character, and the greater the proportion of clay in its composition, the less suitable it is for bone-decay. In a stiff clay soil bones are simply sealed up, and the same is in great measure the case with ground phosphates. The kind of phosphate for clay land is pre-eminently superphosphate, which, owing to its solubility, spreads further through the soil than any other form of phosphate.

Of the five phosphates used bone meal is the coarsest, for, owing to its toughness, it cannot be ground so finely as other forms of phosphate. This is one of the disadvantages which that excellent manure labours under, and another is the extreme slowness with which its nitrogenous matter is decomposed. These are disadvantages of a serious kind when the object of manuring is to present nourishment for the immediate crop; but where the object is rather to raise the general fertility of the land for the benefit of future crops, bones are of great value. On Pumpherston bone meal was applied twice in succession, in 1878 and 1879, but even during the second year no improvement in the crop was able to be detected. In 1880, however, the effect of the bone meal is very apparent in the production of a good crop of hay. There are two reasons for this;—in the first place, the first application had had a long time to decompose in the soil; and in the second, the grass, which made such good use of it, was sown out with the previous crop of barley, and its abundant roots had a year to go in search of and entangle the small fragments of bone. Bone meal is a manure well suited for slow-growing and thickly-rooting plants. At Harelaw there was no bone meal applied the second year, yet the barley crop on that plot was the best of the five, showing that in the free soil of that station the bones had been much more rapidly decomposed. Still there was a considerable residue left for the large crop of hay which followed, and no doubt something also for the heavy oat crop of 1881. A marked feature of the crop on that plot is the comparatively small proportion of straw, and that is due to the want of nitrogen in an active form. A part of the nitrogenous manure applied to that plot was nitrate of soda, but the remainder was the nitrogenous matter of the bone itself. It is evident that the nitrogen in bone is of too slow a kind for the use of a cereal crop which has a short time to grow, and the want of readily assimilable nitrogen has the effect of diminishing in an especial manner the amount of straw.

Regarding the other forms of ground phosphates, the chief thing to be noticed is that their action is very uncertain. Bone ash is probably the most reliable. Fineness of grist has much to do with their efficacy as manures, and all who use ground phosphates should be careful to have them exceedingly finely ground. The hand gives no very reliable test of fineness, for when a certain standard of fineness is reached, one phosphate may be twice as fine as another and yet seem nearly the same to the touch; a wire cloth of 100 meshes to the inch is a safer guide. Another cause of uncertainty in ground phosphates is the difference in their physical condition; some are soft and chalky, while others are hard and crystalline, no matter how finely ground. It is probably this latter character which renders Canadian apatite so unsuited for application in the undissolved state.

We now come to consider what lessons the plots with nitrogenous manures have to teach us. The manures used were five, viz., nitrate of soda, sulphate of ammonia, shoddy or wool waste, horn dust, and dried blood. These are the chief manures of a purely nitrogenous kind, although the last can scarcely be called a purely nitrogenous manure, for it contains a small proportion of phosphate.

The results obtained over the rotation with these substances were as under:—

NITROGENOUS MANURES.

PUMPHERSTON.

		1878.	1879.		1880.	1881.	
No. of Plot.		Turnips.	Barley.	Straw.	Un-manured Hay. 1st Crop.	Oats.	Straw.
	Per Acre.	Tons. Cwts.	Lbs.	Cwts.	Cwts.	Lbs.	Cwts.
13	Nitrate of soda, .	14 18	1420	27	23	1966	27
14	Sulphate of ammonia, . .	14 6	1434	29	20	1822	25
15	Shoddy, 1878-9,	6 3	950	20	...	...	...
	Horn dust, 1880-1,	...	...	...	25	1997	23
16	Dried blood, .	17 11	1546	29	24	815	10

HARELAW.

		Swedes.	Unmanured.				
					1st and 2d Crops.		
13	Nitrate of soda, .	11 14	2318	36	38½	3830	35
14	Sulphate of ammonia, .	11 8	2328	30	39¾	3440	30
15	Shoddy, . .	11 11	2079	34	35½	...	...
	Horn dust, .	...	...	...	...	3742	32
16	Dried blood, .	11 12	2230	32	36	3200	28

The nitrate of soda and sulphate of ammonia plots at Pumpherston have been watched with much interest, and although they have run very closely, yet it is evident that, on the whole, the nitrate of soda has proved the better manure. The most marked difference in the results obtained with these two salts is in the oat crop of 1881, when the nitrate of soda produced the largest crop at both stations, both as regards grain and straw, but especially the latter. The disproportionate increase of straw produced by the action of nitrate of soda and also by sulphate of ammonia is a very characteristic effect of these manures. Nitrate of soda is the most rapidly acting nitrogenous manure in common use. It is capable of being at once assimilated by the plant, and as it produces a large growth of stem and leaf, it is peculiarly adapted for a young growing plant. If applied in too great quantity or too frequently, it is apt to make the plant run to wood, and by retarding the time of ripening, correspondingly to diminish the amount of ripened seed. This retarding effect is even more noticeable when sulphate of ammonia is applied in a similar manner, for it is not quite so rapid in its action as nitrate of soda, and the period of its activity is therefore more prolonged. At Pumpherston in 1879 the sulphate of ammonia produced a slightly better crop than the nitrate of soda, but it is probable that part of that increase was attributable to the residue of manure left from the poor turnip crop of the preceding year. The turnip crop was much injured during the severe winter of 1878-9, especially at Harelaw, where the lifting did not take place till the middle of March. The results on all the turnip plots at Harelaw, except the first twelve, which were got in in fair condition, must be rejected, as no conclusions affecting the manure question can be drawn from them. For the same reason, all the plots beyond 17 at Pumpherston are of little value. Regarding the other nitrogenous manures, it will be seen that shoddy was used for two years. It proved a complete failure, and its use was discontinued, as it was evident that it had no interest for the farmer. It is useful to the manure merchant in supplying him with a cheap source of nitrogen for putting into dissolved manures, and when so treated, it is probably a useful enough form of nitrogenous manure.

Horn dust was substituted for shoddy in 1881, and the effect was unexpected and remarkable. At Pumpherston it produced the best crop of the nitrogen series. It is not a manure that is likely to assume any importance in agriculture, as the supply is necessarily small. It is an insoluble form of nitrogenous manure, but it was applied as a very fine sawdust, and the rapidity of its action was no doubt due to its fineness. Dried blood is an important manure, and is much employed as a source of nitrogen in making mixtures. It is quite clear, from these experiments, what its place among mixtures should be. It is undoubtedly a manure for turnips or other slow-growing crops. It does not decay very rapidly in the soil, and when applied to turnips, it was found that it was only after the crop was well advanced that it began to show its effect. For some time it seemed as if it would be a failure, but during the later part of the growing season the nitrogenous matter of the dried blood became available for the crop, which put on a new growth, and advanced with great rapidity.

It is plain from the results of 1881 at both stations, that dried blood is not a suitable nitrogenous manure for cereals. It only begins to be of use about the time when the cereals have ceased growing, and its failure in 1881 is very conspicuous. In 1879 it yielded a fair crop, but no doubt this was due in great measure to the residue left from the application of the former year. In the same manner the hay crop of 1880 at Pumpherston benefited by the dried blood applied in 1879, and in this respect plot 16 may be compared with plot 5 already referred to.

The potash manures under experiment are two, the sulphate and the muriate, and the following are the results:—

POTASH MANURES.

PUMPHERSTON.							
		1878.	1879.		1880.	1881.	
No. of Plot.		Turnips.	Barley.	Straw.	Unmanured Hay. 1st Crop.	Oats.	Straw.
	Per Acre.	Tons Cwts.	Lbs.	Cwts.	Cwts	Lbs.	Cwts.
19	Sulphate of potash,	13 4	1624	31	24	2132	31
20	Muriate of potash,	10 12	1268	24	20	2225	30
HARELAW.							
		Swedes.	Unmanured.				
19	Sulphate of potash,	11 18	2136	30	36	3724	30
20	Muriate of potash,	11 18	2072	20	38	3649	32

These two manures have not as yet shown any marked peculiarities. Slight differences in the appearance of the crops have been noted, but these were, like the results given above, of an indefinite and fluctuating character. We must await the result of further experiments with these manures.

Three kinds of guano have been applied to plots 23, 24, and 25, Peruvian guano, fish guano, and Ichaboe guano.

GUANOS.

PUMPHERSTON.							
		1878.	1879.		1880.	1881.	
No. of Plot.		Turnips.	Barley.	Straw.	Unmanured Hay. 1st Crop.	Oats.	Straw.
	Per Acre.	Tons. Cwts.	Lbs.	Cwts.	Cwts.	Lbs.	Cwts.
23	Peruvian guano, .	12 9	1669	29	27	1372	20
24	Fish guano, .	6 14	1020	16	18½	1473	21
25	Ichaboe guano, .	10 6	1392	23	22	1924	26
HARELAW.							
		Swedes.	Unmanured.		1st and 2nd Crop.		
23	Peruvian guano, .	10 3	2324	34	38	3366	28
24	Fish guano, .	9 8	2128	30	40	3558	30
25	Ichaboe guano, .	11 4	2230	34	40¾	3444	32

In 1879 the plot manured with Peruvian guano was one of the best on Pumpherston station. It ripened early, and was a very even handsome crop, and the effects of the manure were visible on the hay crop which followed. It was what is now called a high-class guano, with upwards of 10 per cent. of ammonia. In 1881 the quality of the manure was inferior, and the reduction in the crop was very marked.

It is unfortunate that the imports of Peruvian guano have during recent years been very unequal in their character, and this irregularity in composition, combined with high price, has caused that manure to be rather an unsafe investment. But for that there is no doubt that Peruvian guano stands at the head of all light manures, and if genuine and of high quality, has no equal as a fertiliser. Ichaboe guano is also a powerful manure, but the result obtained with it on the Society's stations have also been very irregular. It is a highly nitrogenous manure, but a considerable part of its nitrogen is derived from feathery particles, which, unless very small, are slow to decompose. The greater or less abundance of feathery matter explains the irregular result obtained from its use; and as the guanos applied to the above plots were not specially treated, but were fair samples of the ordinary supply, any deficiency in the character of the manure is reflected in the result produced by its application. It would be easy to select and manipulate samples of guano so as to produce more conspicuous and constant results, but results so obtained would be liable to mislead. The most notable result obtained in this group are those on the so-called "fish guano" plots. The crops produced with it in 1878 and 1879 were failures, but the oat crop of 1881 showed a very marked improvement. This was partly due to the improved character of the manure. Its chief defect is the large amount of oil which it usually contains, viz., about 10 per cent., but the material used in 1881 contained little more than one-half of that amount. The result was that at Pumpherston it produced a better crop than the Peruvian guano, and at Harelaw it was the best of the guano plots. It is highly probable that we have here another instance of the delayed action of a slowly working manure, and that the effect of the fish guano applied in former years is only now becoming apparent. Fish guano is not, properly speaking, a guano at all, but resembles bone and dried blood, for it is derived from the residue of fish-curing yards on the Norwegian and American coasts, and is a manufactured manure. The supply of material for its manufacture is very large, and is not of a speculative or irregular kind, but rather one which will steadily increase from year to year. It is therefore much to be desired in the interest of agriculture, that methods for the more complete extraction of the oil may be adopted, so that there may be available a steady supply of a high class nitrogenous and at the same time phosphatic manure.

The next experiment to be noticed is that contained on plots 28, 29, and 30. It is an experiment to determine the extent to which a superphosphate should be dissolved so as to produce the best results.

The amount of dissolved phosphate in superphosphates varies from about 20 to 40 per cent. depending upon the quality of the phosphate employed, and the extent to which it is dissolved. In the experiment detailed below the amounts of dissolved phosphates were 15, 25, and 35 per cent. or thereabout. The total phosphate was the same in all cases.

SUPERPHOSPHATES.

No. of Plot.		1878.		1879.		1880.	1881.	
		Turnips.		Barley.	Straw.	Un-manured Hay. 1st Crop.	Oats.	Straw.
		PUMPHERSTON.						
	Per Acre.	Tons.	Cwts.	Lbs.	Cwts.	Cwts.	Lbs.	Cwts.
28	Superphosphates, 15 per cent. soluble phosphates, . .	7	5	1237	20	21	1736	22
29	Superphosphates, 25 per cent. soluble phosphates, . .	10	18	1590	28	24	1667	22
30	Superphosphates, 35 per cent. soluble phosphates, . .	6	4	1428	24	19	2110	28
		HARELAW.						
		Swedes.		Unmanured.				
						1st and 2nd Crop.		
28	Superphosphates, 15 per cent. soluble phosphates, . .	10	19	2000	32	37	3526	30
29	Superphosphates, 25 per cent. soluble phosphates, . .	11	5	2156	34	45¾	3548	32
30	Superphosphates, 35 per cent. soluble phosphates, . .	12	8	2076	32	37½	2929	32

It will be seen from these figures that the advantage lies with the medium superphosphate. This is not the result that we should naturally expect. Having found that dissolved phosphates were better than undissolved phosphates, we should expect that the superphosphate which contained the highest percentage of dissolved phosphate would produce the best crop, and we should especially expect to find that the case on the more clayey soil of Pumpherston. On that station the medium superphosphate gave the best return both in barley grain, and straw, and the hay crop which followed was also superior. In 1881 the position was reversed, the high class superphosphate was decidedly the best. On Harelaw station the medium superphosphate was again the best, and the highly dissolved one was the worst. There is not here the regularity which is so comforting to an experimenter, and the cause of the irregularity ought to be discovered. There is no difference here due to any inequalities in the composition of the manures, as that is completely under control. The only thing which occurs to me as a probable explanation of the irregularities, is the condition of the manure. A low class superphosphate is usually dry and powdery, and capable of being spread with great evenness. A high class superphosphate, on the other hand, requires careful handling. It is apt to be moist, and during transport it coheres into a mass like a stone. It requires to be broken up before sowing, and although this has been done each year, yet there are little lumps which escape observation, and lumps which form in the sheet under the hand of the sower, so that on going over the ground after the manure is spread bits of superphosphate the size of a walnut are frequently observed.

This is unfortunate in two ways, for not only is manure applied to one inch of ground, which ought to be spread over a superficial foot, but the probability is that, instead of nourishing, it may scorch any roots or seed with which it comes in contact. For heavy land, it is reasonable to suppose that the more highly dissolved a superphosphate is the better, provided it can be evenly spread over and distributed through the soil; but, inasmuch as that is very difficultly attainable, it is evident that a better result may be obtained at some sacrifice of solubility, and that in the end a medium superphosphate is the more reliable and economical manure. Even a superphosphate with about 25 per cent. soluble may become lumpy and require to be broken up; but having been broken up, it is not so liable to cohere again in the act of sowing. I do not know that the attention of farmers has been sufficiently drawn to this characteristic of superphosphates, and indeed of all other highly dissolved manures, but it is quite certain that their efficacy is frequently much impaired for want of thorough disintegration, and this is a matter well deserving strict attention even at the cost of considerable trouble.

In the experiments above referred to the manures employed were all general manures, containing the three chief elements of plant food; but besides these, there are several others in which one or two constituents are awanting, and there are plots which have been left unmanured from the beginning. They afford very useful information, and there is no doubt that if something of the kind were practised by all farmers who use artificial manures largely, they would be enabled from the results of their experiments to discover what are the kinds of manure their land needs most, and in what proportion it is most profitable to apply it.

The results obtained on these odd plots at the Society's stations were as follow:—

INCOMPLETE MANURES.

No. of Plot.		1878.		1879.		1880.	1881.	
		Pumpherston.						
		Turnips.		Barley	Straw.	Un-manured Hay. 1st Crop.	Oats.	Straw.
	Per acre,	Tons.	Cwts.	Lbs.	Cwts.	Cwts.	Lbs.	Cwts.
11	Potash and nitrate of soda. No phosphates,	12	1	1036	23	22	1813	24
12	Phosphates alone,	9	7	1028	17	18	780	8
17	Phosphates and potash. No nitrogen,	7	3	952	17	23	840	12
18	Nitrate of soda alone,	10	9	1139	19	22	1646	24
21	Phosphates and nitrate of soda. No potash,	9	16	1646	29	28	1678	22
22	Potash alone,	3	10	756	12	15	526	6
27	Unmanured,	5	4	1163	19	20	489	12
		Harelaw.						
		Swedes.		Unmanured.				
11	Potash and nitrate of soda. No phosphates	13	2	2147	34	33½	3324	34
12	Phosphates alone,	12	8	2260	30	37	2752	24
17	Phosphates and potash.' No nitrogen,	11	12	2084	30	37	2572	24
18	Nitrate of soda alone,	11	4	2344	36	37	3101	36
21	Phosphates and nitrate of soda. No potash,	10	12	2200	36	35¾	3188	22
22	Potash alone,	10	4	2060	30	35	2669	24
27	Unmanured,	10	13	2200	34	44½	2474	22

The crops produced by the unmanured plots are not always the worst. This is a frequent experience, and one which is apt to dishearten experimenters, and cause them to doubt the accuracy of their work. But it is a mistake to suppose that the inevitable result of applying a manure is to increase the crop; it may have an opposite tendency. This is clearly brought out by the results obtained on plot 22, to which only potash manure was applied. The deleterious effect of that manure, when applied alone, is very marked at both stations. The only crop which has been benefited by it is the oat crop, and the benefit at Pumpherston is very slight, and is noticeable only in the yield of grain, the yield of straw having been seriously diminished. The effect of potash upon the straw of cereal crops is to improve its quality rather than its quantity. The proportion of straw to grain is diminished by its use, but the strength of the straw is materially increased. The application of potash manure is therefore to be recommended as a means of preventing "lodging." The sole application of nitrate of soda, as seen on plot 18, has an opposite tendency; it unduly increases the proportion of straw, and when employed in large quantity produces an abundant and weak crop of straw, which is liable to lodge. These two manurial constituents counteract or rather correct each other, and the character of the crop produced on plot 11 shows the advantage derived from their combined application; the proportion of grain to straw on that plot is more normal, but, as has already been noticed, the total crop is not quite up to the average of those plots to which all three constituents were applied. The sole application of phosphate in the form of bone ash (plot 12) has done very little for the crop, and that little is considerably diminished when potash salts are added to that manure, as seen on plot 17. The manure which has produced the best result when applied alone is nitrate of soda, and it is quite evident that it is in nitrogenous matter that the soil is most deficient.

These few plots with partial manures convey much special information, but one of their chief uses is to point out in a most trustworthy manner what are the relative needs of the soil for the three important constituents of manures. If we take the average produce of the three plots on which each of these constituents in turn was withheld, we obtain the following results:—

TEST PLOTS.

No. of Plot.		1878.		1879.		1880.	1881.	
		Turnips.		Barley	Straw.	Hay.	Oats.	Straw.
	Per Acre.	Tons.	Cwts.	Lbs.	Cwts.	Cwts.	Lbs.	Cwts.
PUMPHERSTON.								
12 18 21	No potash, .	9	17	1271	22	23	1368	18
11 18 22	No phosphates,	8	13	1044	18	20	1328	18
12 17 22	No nitrogen, .	6	13	912	15	19	715	9
HARELAW.								
12 18 21	No potash, .	11	8	2268	34	36½	3014	31
11 18 22	No phosphates,	11	10	2184	33	35	3365	31
12 17 22	No nitrogen, .	11	5	2135	30	36	2664	24

It is here made evident that the great want of Pumpherston soil is nitrogen, and that want is becoming greater year after year. A nitrogenous manure that would remain in the soil for some time, and raise the general fertility, is what it evidently wants,—a bulky nitrogenous manure containing much organic matter, such as farm-yard manure, rape dust, or compost of some kind. There is not so much need of phosphate on that soil, and there is probably no need of potash manure.

At Harelaw the want of nitrogen is now beginning to be felt, and there is also an evident want of potash, while phosphates are relatively the least needed. If it were desired to put these fields back into general cultivation, we should know from these results what were the relative proportion in which these constituents were required in each case, and thus be guided to a proper selection of manures.

Every kind of land has its special want, and it is by a simple practical test such as this that the want can be surely discovered.

The experiments already described are designed to show the relative values of the chief manures in common use; but there are others which have for their object the determination of the quantities of these which may be most advantageously applied. The results are of special rather than of general interest, inasmuch as the information they impart has reference chiefly to the special soil and circumstances of the experiments. The general result has been to show that the quantity of manure applied over the stations is not large enough to give the best return. It is quite evident that by increasing the quantity by one-third there is produced an increase of crop which far more than counter-balances the additional expense of the manure; but, as there are special dangers to which heavy crops are liable, it is prudent in carrying on experiments to err on the side of giving too little rather than too much manure.

On plot 36 there was a series of miniature plots, $\frac{1}{12}$ acre in extent, where duplicates of twenty of the rood plots were conducted. They have now been abandoned, as it was quite apparent that, despite the great care and trouble bestowed upon them, their results were not trustworthy. Little local inequalities of soil, and even very trifling accidents of growth, were found entirely to distort the evidence they were designed to produce. If twenty or thirty such sets of experiments had been undertaken, the results would have been reliable, but the labour would have been enormous. On the whole, it is better that agricultural experiments in the field should be conducted on an agricultural scale, and subjected to the ordinary conditions of agriculture.

Besides the experiments included in the general scheme, there are others being carried on from year to year. The results of some of these have already been published, while others are being held over, and will not be reported until they have been confirmed by the experience of successive seasons. Considering the very variable character of our climate, and the many disturbing influences to which field experiments are liable, great caution must be exercised in drawing conclusions from the results of one year's experiments, especially if these have been confined to one locality. The temptation to publish results is very great, and those who are interested in them are naturally impatient of delay, but all who have had much experience in field experimenting know how necessary it is to suspend their judgment until they are in possession of facts established by the testimony of successive years.

The experiments which form the subject of this report are now being repeated over a second rotation, and the disturbances due to former treatment of the land may now be considered so small as not to affect the accuracy of the results produced by the yearly application of the same manures, and when the report of this rotation comes to be written, we shall be able to speak with more confidence regarding the relative value of the manures under experiment, and especially of those whose operation hitherto has not been very uniform.

Various other lines of inquiry have been opened up by these experiments, such as the relative advantages of early and late manuring, and the best method of applying mixed manures. The usual practice in applying artificial manures is to put them in at the time of sowing the crop. This is the simplest method of application; but it is open to question whether, in many or even in most cases, it is the most effective or the most economical method. A mixed manure usually contains ingredients of very different degrees of solubility, and it may frequently happen that the most soluble part of the manure applied with the seed may be washed down through the soil before the roots of the crop are sufficiently developed to assimilate it, and the most insoluble part of the manure may not have had time to dissolve and become available as plant food until the growing season is past. It is evident that the best results are obtained when the ingredients of a manure are present in an available form exactly at the time when the plant requires them most; but that is a condition which is difficult to attain by the use of mixed manures applied once for all. Careful manure manufacturers frequently show great skill in making up mixtures which are intended to be useful to the plant at all stages of its growth, and supply the farmer with well-balanced manures which are, on the whole, very reliable, and produce good average results; but more information and experience are wanted in this matter, and the record of some of the plots on the Stations favour the view that there are some kinds of manure which should not form part of a general mixture, being either too quick or too slow in their action. The experiments during the second rotation have been modified so as to yield information on this subject.

The nature of the manure supply is continually changing; as old supplies are being exhausted, new materials are being introduced to take their place, and a few plots on the stations are set apart for testing the value of these, and putting farmers as quickly as possible in possession of information which will aid them in selecting the manures most suitable for their purposes.

SCHEME OF EXPERIMENTS AT THE EXPERIMENTAL AGRICULTURAL STATIONS OF THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND, COMMENCED MAY 1878.

At each station there are 10 acres under experiment, divided into 40 plots of 1 rood each. The cropping is a rotation of turnips, barley, grass, or beans and oats. The chief object of the experiments is to determine the crop-producing value of the various forms of manures in common use. The manures on each plot contain 40 lbs. phosphoric acid, 30 lbs. potash, 20 lbs. nitrogen, unless otherwise indicated.

Plot. PHOSPHATIC MANURES.

1. Bone Ash, . . .
2. Bone Ash, dissolved, . .
3. Ground Coprolites, . .
4. Ground Coprolites, dissolved,
5. Bone Meal, . . .
6. Bone Meal, dissolved, . . } with Potash Salts and Nitrate of Soda.
7. Phosphatic Guano, . .
8. Phosphatic Guano, dissolved,
9. Ground Mineral Phosphate,
10. Ground Mineral, dissolved, .
11. No Phosphates, . .
12. Bone Ash alone.

NITROGENOUS MANURES.

13. Nitrate of Soda, . .
14. Sulphate of Ammonia, .
15. Horn Dust, ... } with Potash Salts and Superphosphate.
16. Dried Blood, . . .
17. No Nitrogen, . . .
18. Nitrate of Soda alone.

Rape Cake and Cotton Cake, see Plot 35.

POTASH MANURES.

19. Sulphate of Potash, .
20. Muriate, ... } with Nitrate of Soda and Superphosphate.
21. No Potash, ...
22. Sulphate of Potash alone.

GUANOS.

23. Peruvian Guano, } Containing about 10 per cent. Ammonia, and
24. Fish ,, } 10 per cent. soluble Phosphate.
25. Ichaboe ,,
26. Unmanured.
27. Unmanured.

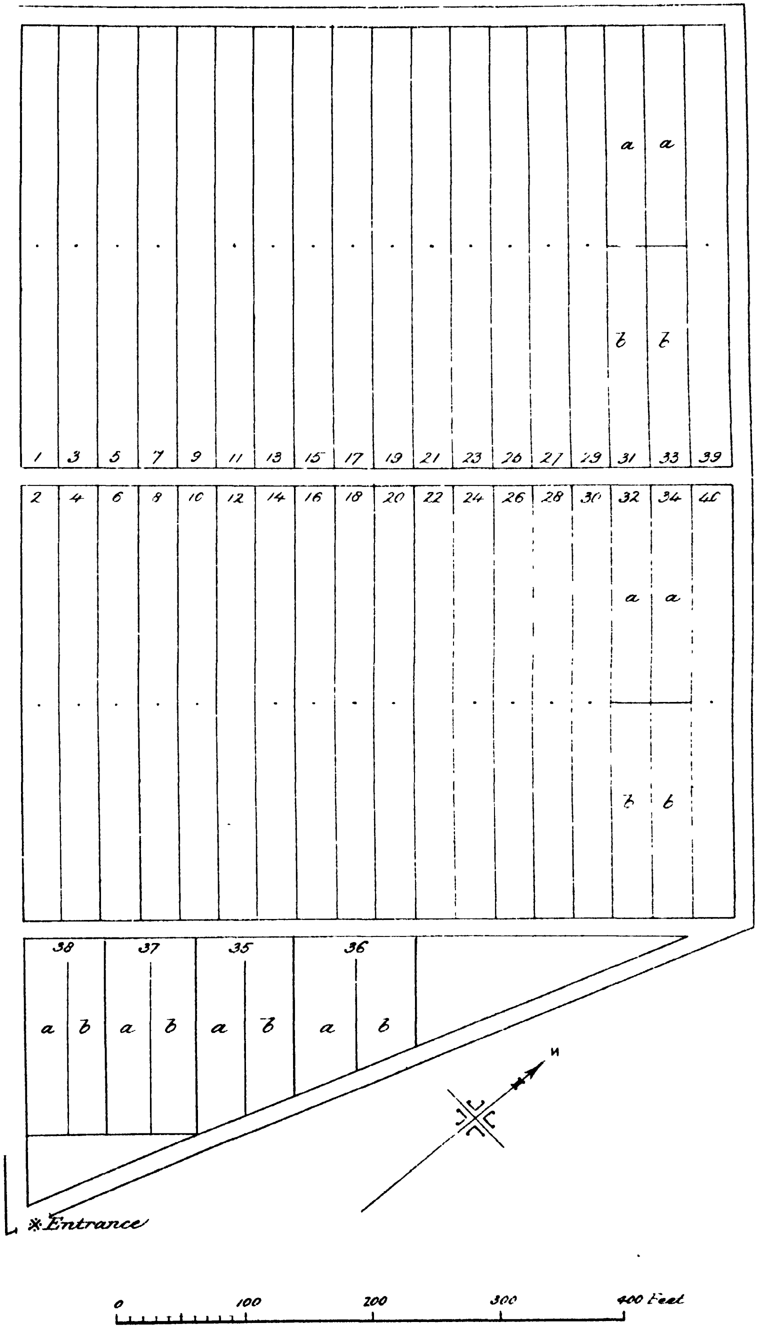
SUPERPHOSPHATES.

28. 10 % Soluble Phosphate of Lime, } with Sulphate of Ammonia and
29. 25 % ,, ,, } Muriate of Potash.
30. 40 % ,, ,,

VARIOUS QUANTITIES.

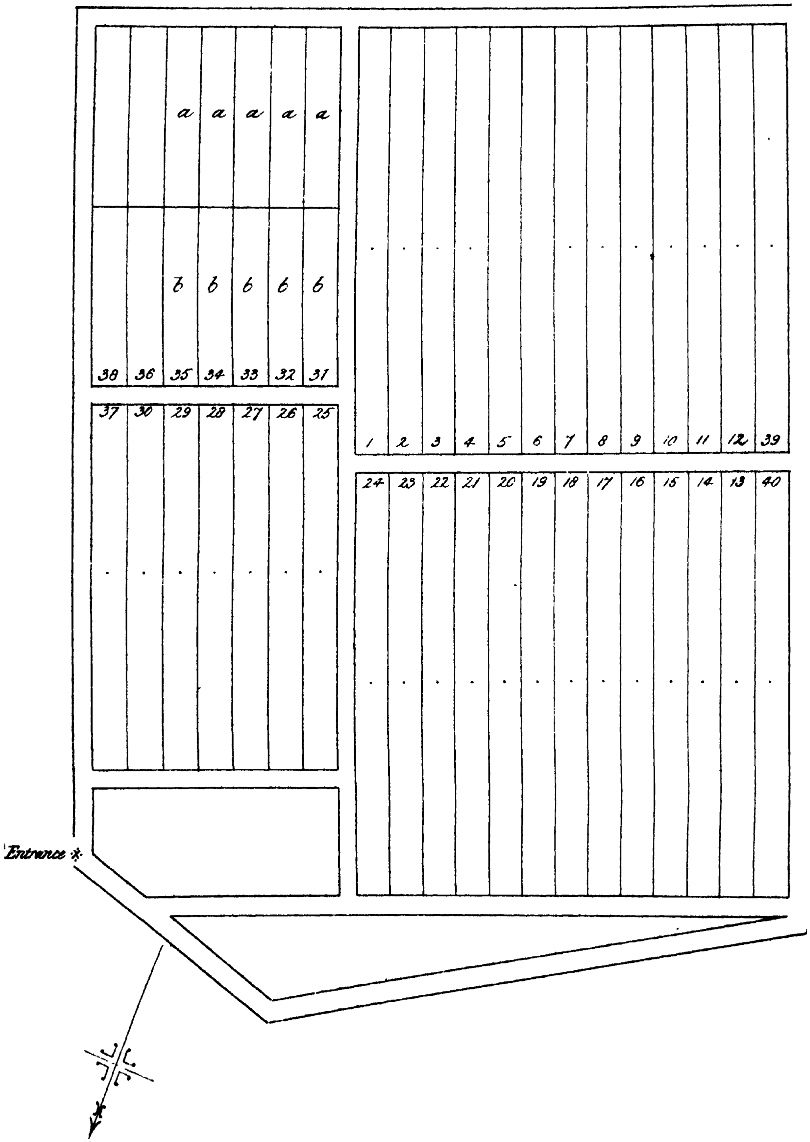
31. Same as Plot 1. { *a.* $\frac{2}{3}$ quantity per acre.
 { *b.* ,,
32. ,, ,, 2. { *a.* $\frac{2}{3}$,,
 { *b.* $\frac{4}{3}$,,
33. ,, ,, 14. { *a.* $\frac{2}{3}$,,
 { *b.* $\frac{4}{3}$,,
34. ,, ,, 19. { *a.* $\frac{2}{3}$,,
 { *b.* $\frac{4}{3}$,,
35. { *a.* Rape Seed Dust, } with Potash Salts and Superphosphate.
 { *b.* Cotton Cake Dust, }
37. Unmanured.
38. { Same as Plot 7, with addition of Sulphuric Acid and Sulphate of Lime. { *a.* 1 cwt. *b.* 2 cwt.
39. } Unmanured.
40. }

Plan of Pumpherston Experimental Station



High. & Agric. Soc. Trans

Plan of Harelaw Experimental Station.



Scheme of Experiments at the Experimental Agricultural Stations of the Highland and Agricultural Society of Scotland, commenced May 1878.

At each station there are 10 acres under experiment, divided into 40 plots of 1 rood each. The cropping is a rotation of turnips, barley, grass, or beans and oats. The chief object of the experiments is to determine the crop-producing value of the various forms of manures in common use. The manures on each plot contain 40 lbs. phosphoric acid, 38 lbs. potash, 20 lbs. nitrogen, unless otherwise indicated.

Plot.

Phosphatic Manures.

1. Bone Ash, . . .
2. Bone Ash, dissolved, . .
3. Ground Coprolites, . .
4. Ground Coprolites, dissolved,
5. Bone Meal, . . .
6. Bone Meal, dissolved, .
7. Phosphatic Guano, . .
8. Phosphatic Guano, dissolved,
9. Ground Mineral Phosphate,
10. Ground Mineral, dissolved,
11. No Phosphates, . . .

with Potash Salts and Nitrate of Soda.

12. Bone Ash alone.

Nitrogenous Manures.

13. Nitrate of Soda, . .
14. Sulphate of Ammonia, .
15. Horn Dust, . . .
16. Dried Blood, . . .
17. No Nitrogen, . . .

with Potash Salts and Superphosphate.

18. Nitrate of Soda alone.

Rape Cake and Cotton Cake, see Plot 35.

Potash Manures.

19. Sulphate of Potash, .
20. Muriate, ...
21. No Potash, . . .

with Nitrate of Soda and Superphosphate.

22. Sulphate of Potash alone.

Guanos.

23. Peruvian Guano,
24. Fish "
25. Ichaboe "

Containing about 10 per cent. Ammonia, and 10 per cent. soluble Phosphate.

26. Unmanured.
27. Unmanured.

Superphosphates.

28. 10 % Soluble Phosphate of Lime,
29. 25 % " "
30. 40 % " "

with Sulphate of Ammonia and Muriate of Potash.

Various Quantities.

31. Same as Plot 1. { *a.* $\frac{2}{3}$ quantity per acre.
    b. "
32. " " 2. { *a.* $\frac{2}{3}$ "
    b. $\frac{4}{3}$ "
33. " " 14. { *a.* $\frac{2}{3}$ "
    b. $\frac{4}{3}$ "
34. " " 19. { *a.* $\frac{2}{3}$ "
    b. $\frac{4}{3}$ "
35. { *a.* Rape Seed Dust, *b.* Cotton Cake Dust, } with Potash Salts and Superphosphate.
37. Unmanured.
38. Same as Plot 7, with addition of Sulphuric Acid and Sulphate of Lime. { *a.* 1 cwt. *b.* 2 cwt.
39. 40. } Unmanured.

THE CEREAL AND OTHER CROPS OF SCOTLAND FOR 1882, AND METEOROLOGY OF THE YEAR RELATIVE THERETO.

THE CROPS.

THE following comparison of the cereal and other crops of 1882 with the previous year, has been prepared by the Secretary of the Society from answers to queries sent to eminent agriculturists in different parts of the country.

The meteorology of the year has been furnished by Mr. Alexander Buchan, Secretary of the Meteorological Society of Scotland.

The queries issued by the Secretary were in the following terms:—

1. What was the quantity, per imperial acre, and quality of grain and straw, as compared with last year, of the following crops? The quantity of each crop to be stated in bushels. What quantity of seed is generally sown per acre?—(1) Wheat, (2) Barley, (3) Oats.
2. Did the harvest begin at the usual time, or did it begin before or after the usual time? and if so, how long?
3. What was the quantity, per imperial acre, and quality of the hay crop, as compared with last year, both as regards rye-grass and clover respectively? The quantity to be stated in tons and cwts.
4. Was the meadow hay crop more or less productive than last year?
5. What was the yield of the potato crop, per imperial acre, as compared with last year? The quantity to be stated in tons and cwts. Was there any disease, and if so, to what extent, and when did it commence?
6. What was the weight of the turnip crop, per imperial acre, and the quality as compared with last year? The weight of the turnip crop to be stated in tons and cwts. How did the crop braird? Was more than one sowing required? and why?
7. Were the crops injured by insects? State the kind of insects? Was the damage greater or less than usual?
8. Were the crops injured by weeds? State the kind of weeds. Was the damage greater or less than usual?
9. Were the pastures during the season of average growth and quality with last year?
10. How did stock thrive on them?
11. Have cattle and sheep been free from disease?
12. What was the quality of the clip of wool, and was it over or under the average?

From the answers received, the following statistics have been compiled :—

EDINBURGHSHIRE.—Wheat, 50 bushels, as compared with 30 bushels last year ; quality far superior to last year ; seed, 3 bushels. Barley, 50 bushels this year, as compared to 42 last year ; quality superior ; seed, 3½ bushels. Oats, 60 bushels, quantity and quality rather better than last year ; seed, 3 bushels. Harvest began about the usual time. Hay about 2½ tons, as compared with 2 tons last year ; quality not so good. Meadow hay crop very much more productive than last yeat. Potatoes 7 tons, as compared with 9 tons last year ; the early varieties and Regents about one-third diseased ; the Champions and Magnum Bonums free of disease. Turnips, 28 tons per acre, as compared with 20 tons last year ; only one sowing required. No damage from insects of any great importance. Weeds not worse than usual. Pastures of far more than average growth, and about double last year. Stock throve well. Cattle and sheep have been very healthy. Clip of wool about an average.

LINLITHGOWSHIRE.—Wheat nearly the same as last year ; grain in general a little finer ; from 30 to 40 bushels ; seed from 2½ to 3 bushels. Barley in general greater both in quantity and quality—from 30 to 45, and in some cases 50 bushels ; seed from 2½ to 3 bushels. Oats—greater quantity of straw, grain in general a little better ; from 32 to 40 bushels ; seed, 4 to 6 bushels. Harvest began about the usual time, but in the higher parts a little later. Hay in general better than last year—from 2 to 3 tons. No meadow hay in this district. Potatoes were not so large as last year ; disease very bad in the earlier varieties ; commenced just before lifting, and spread very rapidly. Turnips better crop than last year—from 15 to 30 tons ; late in brairding from drought ; very little second sowing required. Almost no damage by insects. The crops were not injured by weeds. The pastures above the average. Stock throve well. Cattle and sheep free from disease. Clip of wool about average.

HADDINGTONSHIRE (Upper District).—There is little wheat grown in the district. Barley, 40 bushels ; of fair quality, weighing about 56 lbs. ; very much discoloured ; straw average ; seed, 3½ bushels. Oats, 52 bushels ; quality average ; weight 42 lbs. ; straw coarse and bulky ; seed, 5 bushels. Harvest began 2nd September, ten days earlier than last year. Hay an average, and fairly well secured. Meadow hay was a large crop, and of superior quality where early secured. Potatoes from 5 to 6 tons ; finer sorts more than half diseased ; Champions and Magnum Bonums pretty sound, and have kept well. Turnips more than double the crop of last, and above an average ; only once sown ; brairded well ; have kept well, but finger-and-toe on increase. Oat crop injured by grub in spring ; turnip fly did little damage ; yellow weeds or charlock very troublesome. Pastures good, and of better feeding quality than last year. Stock fed well, and were wholly free of disease. Clip of wool about one-twelfth better than last year in weight and average in quality.

HADDINGTONSHIRE (Lower District).—Wheat about 44 bushels ; quality superior to last season, both in grain and straw ; seed, 3 bushels. Barley about 48 bushels ; quality little better than last season, straw about the same. Grain hurt by high winds in end of July and beginning of August ; seed, about 2½ bushels. Oats, a good crop of about 56 bushels ; in some cases it suffered from cold weather in spring ; seed, about 4 bushels. The harvest began about fourteen days earlier than last season, being about the usual time. Hay above average crop—about 3 tons. No meadow hay. Potato crop about 3 tons less than last season ; will average between 5 and 6 tons. Regents were much diseased ; first showed symptoms in September. The other varieties comparatively free of disease, but small in size. Turnips good as compared with last year—about 10 tons more; almost no resowing required. Crops were not much damaged by insects. No damage by weeds on well cultivated land. Pastures of average growth and equal to last season. Stock throve well. Cattle and sheep been quite free from disease. Wool of good quality, and an average clip.

BERWICKSHIRE.—Wheat, 32 bushels; good quality; straw say 250 stones; seed about 3 bushels. Barley, 36 bushels; good quality; one half damaged by weather; straw about 180 stones; seed about 3 bushels. Oats, 42 bushels; straw about 180 stones; quality good. Harvest began five days later than average. Very large crop of hay; seemed in fine order. Meadow hay large crop; seemed in fine order. Potatoes, say 7 tons Champions, 5 tons Reds; Regents a failure. Turnips 20 to 24 tons per acre; fine quality; brairded well. Crops not injured by insects, nor by weeds. Pastures of average growth; better than last year. Stock throve well. Cattle and sheep have been free from disease. Clip of wool about average.

ROXBURGHSHIRE.—No wheat. Barley, 42 bushels; both straw and grain better quality than last year, except on later farms, where it was injured by wet weather. Oats, 38 bushels; both grain and straw better quality than last year. Harvest began at an average time of year. Hay a good crop, and generally well got in. No meadow hay. Potatoes not so good as last year; Earlies and Rocks much diseased, former about one-half, latter one-third; Champions had little disease; crop about 5 tons. Turnips good in quality; about 18 tons; brairded well, and very little resowing required. Turnip fly did little damage, though present in considerable numbers. No damage by weeds. Pastures stood out well, and were better than last year. Stock throve well, and were particularly free of disease. Clip of wool not so heavy as last year.

SELKIRKSHIRE.—Wheat, almost none grown. Barley an average crop in bulk, and about 28 bushels; 3 bushels seed. Oats, full average crop of both grain and straw, and fine quality where early secured; considerable portions of higher lands much exposed, and must have suffered damage; seed, 4 to 5 bushels. Harvest began about third week in August on low grounds, but was unusually protracted on high lands, much grain being exposed far into November. Hay a very fine crop, and well secured in most cases; quantity from 1½ to 2 tons. Meadow hay also a full crop, and more productive than last year. Potatoes under average, and would yield from 3 to 4 tons; good deal of disease, apparent first about August. Turnips in most cases a full average—17 to 20 tons; sprinkling of finger-and-toe, but otherwise fine quality; brairded well, and only one sowing required. Crops not injured by insects. Weeds not worse than usual. Pastures of more than average growth and good quality. Stock throve well. Cattle and sheep almost entirely free from disease; county wholly free at this date (January 25, 1883). Quality of clip very good, and beyond average in quantity; low price of some years' standing continues, seldom exceeding 11d. per lb.

PEEBLESSHIRE.—No wheat. Barley, 40 bushels average; grain a fair average as regards quantity and weight; straw generally light; yield much better than last year. Oats about 40 bushels; quality and weight of grain much better than last year, but rather less straw. Harvest began about the usual time (middle of August), but much protracted by wet weather in the higher districts; much of crop stacked in bad order; where grass and clover seeds were sown with the crop, in many cases it reached above band of sheaf, and owing to the damp state of weather it was difficult to get it in a fit state for the stack; this was avoided where the seeds were rolled in about a month after the crop was sown. Hay, quantity 2 tons—fully double last year; generally well got. Meadow hay good crop; very much heavier than last year. Potatoes less than last year; average 5 tons, but with little or no disease. Turnips about 18 tons, splendid crop, quality excellent; very superior to last year; brairded well; only one sowing required, except to small extent. Little or no damage to crops by insects. No injury caused by weeds on well cultivated land. Pasture good, much better than last year; quality of grass good. Stock did well, and there was no disease. Wool good quality, and over average; prices low.

DUMFRIESSHIRE (Upper Nithsdale).—No wheat or barley grown. Oats about 33 bushels; quality under average, both in grain and straw, in consequence of a cold, wet summer; seed from 5 to 6 bushels. Harvest began about ten days later than usual. Hay about a ton and a half; quality good, and quantity more than last year. Meadow hay more productive than last year. Potatoes, quantity less than last year, about 3 tons; a good deal diseased, say one-third, commencing early. Turnips from 6 to 10 tons; very irregular on damp land; very poor both in quality and quantity; fairly brairded, and not a great deal twice sown. Crops were not much injured by insects. Weeds injured the crops more than usual, in consequence of wet summer. Pastures were of average growth, but under average quality. Stock did not thrive so well as usual, for want of heat and sun. Rather more than average disease in cattle and sheep. Wool of average quality, but under average weight.

STEWARTRY OF KIRKCUDBRIGHT.—Little or no wheat grown. What little barley grown, above average crop. Oats, 5 bushels above average; straw much above previous years; grain thrashing out rather light, and not so much in bulk as compared with straw. Harvest began at least a fortnight earlier than usual, and was unusually quick. Ryegrass and clover much above previous year in quantity and quality, and considerably above average. Meadow hay much more productive. Potatoes not so good as last year; disease began earlier, and about one-half earlies diseased, and one quarter of late kinds. Turnips much above last year; brairded well; little second sowing; about 20 to 25 tons; more than this on really good land. No injury to speak of done by insects. Owing to the wet weather and difficulty experienced in cleaning the land, weeds most abundant, all kinds. Growth and quality above last year considerably. Stock throve well, and were entirely free from disease. Clip of wool less in quantity and quality.

WIGTOWNSHIRE.—Wheat, 24 bushels; better than last year; straw good and well harvested; seed, 3 bushels. Barley, 32 bushels; weight 52 lbs.—2 lbs. better than last year; straw good. Oats, 35 bushels; weight 41 lbs.—1 lb. better than last year; straw very good, and well harvested. Harvest began about ten days later than usual. Hay about 1¼ ton, and better crop than last year. Meadow hay more productive than last year. Potatoes about 6 tons—2 tons less than last year; disease began early, and, except in Champions and Magnum Bonums, was very severe. Quantity of turnips from 15 to 18 tons—about 3 tons better than last year; brairded well; no resowing required. No damage by insects or weeds. Pastures equal to last year; little sunshine. Stock throve well, and have been free from disease. Clip of wool good, and above the average.

AYRSHIRE.—Wheat, 28 bushels in 1882—about 24 bushels in 1881; quality better in 1882 than the crop of previous year; blossoming season was not very unfavourable; straw more than average in bulk; about 3 bushels of seed. Barley—great bulk of straw and poor yield of grain; two years in succession of very poor returns; about 28 to 30 bushels in 1882, and 26 to 28 in 1881. Oats, bulky crop, and deficient produce of corn—about 38 to 40 bushels in 1882, and 42 bushels in 1881; grain light in the bushel; the straw of all the cereal crops was soft. Harvest nearly three weeks later than usual. The hay crop was much larger in 1882 than in the previous year; a good deal of it was put up in rather inferior condition. Meadow hay a very good crop. The early crops of potatoes, raised in the last week of June and July, were generally good and profitable; the autumn crop was pretty well grown, but was affected by disease before the tubers reached full size; with the exception of Champions and Magnum Bonums, the crop was nearly destroyed; from 1 to 2 tons saved of other varieties. Extra crop of turnips on good green crop land; brairded well. Injury by insects nothing unusual. Nothing remarkable injured by weeds. Good grazing season. Stock did moderately well; season on the whole rather cold. Nothing special with regard to disease among cattle and sheep. Clip of wool over average.

BUTE.—Wheat about 32 bushels; quality of grain and straw fully better than last year, although both were injured by rain; seed, 4 bushels; very little wheat grown; valued as much for straw as grain. Barley about 36 bushels; quality of grain and straw better than last year; injured by too much rain; seed about 4 bushels. Oats about 38 bushels; quality better than last year; both grain and straw injured by rain; seed, 5 to 6 bushels. Harvest began about the usual time, and some crops quickly got, but much protracted by wet weather well on into October. Hay pretty good—about 2 tons; both ryegrass and clover better than last year, and better secured. Meadow hay more productive than last year. Potatoes promised well, but early attacked by disease, and turned out less than last year; Champions returned 5 to 6 tons, other varieties about 3 tons. Turnips 14 tons, being above that on dry land and below that on wet; on the whole not so good as last year; brairded well, and there was little second sowing. The crops were not particularly injured by insects. Crops injured by weeds on account of the wet season; red-shank principally prevailed. Pastures of better growth and quality than last year. Stock throve well, and dairy produce fairly good. Cattle and sheep have been comparatively free from disease. Clip of wool fair in quality and average in quantity.

ARRAN.—No wheat. Barley, 30 bushels; both grain and straw better than formerly; seed about 2½ bushels. Oats, 36 bushels; straw and grain better than former years; seed, 6 bushels. Harvest began about the usual time, 28th August. Hay rather better this year—about 2 tons. No meadow hay. Potato crop not so good this year—about 2½ tons; early kinds badly diseased; began to appear about the beginning of July. Quality of turnips good—about 20 tons; brairded well; did not require resowing. No injury by insects or weeds. Pastures better than last year. Stock did very well. Cattle and sheep have been free from disease. Clip of wool, quality good, above average.

LANARKSHIRE (Upper Ward).—No wheat. Barley, 32 bushels; straw better than last year, quality also; seed would average 3 bushels. Oats, 40 bushels; quality middling; late got in very inferior; straw abundant but coarse, considerably laid and spoiled with rain before cutting; both straw and corn more than last year, although not so good in quality; seed, 5 bushels. Harvest began about ten days behind usual time. Hay on good land 2½ tons, on inferior land 1½ ton; good quality where not spoiled with wet; fully 10 cwt. more than last year. Meadow hay more productive than last year by 1 ton. Potatoes, Regents half diseased, about 2½ tons sound; Champions little diseased, about 7 tons sound; Regents not so good as last year, Champions better. Turnips, 22 tons; better than last year by 5 tons; brairded well; little or no resowing. Damage by insects less than usual. Weeds not easily killed owing to wet; wild mustard and chickweed prevailed. Pastures better than last year. Stock throve well. Cattle and sheep free from disease. Clip of wool over average.

Lanarkshire (Middle Ward).—Wheat about 35 bushels; superior to last year; seed, 3 bushels. No barley. Oats about 48 bushels; quality superior to last year; seed about 4 bushels. Harvest began about usual time. Quantity of hay about 2 tons per acre; as good as last year. No meadow hay. Potatoes about one-third less than last year, and would not exceed 4 to 5 tons; one-half diseased. Quantity of turnips about 20 tons; brairded well, and only one sowing required. No injury by insects. Greater damage by weeds than last year. Pastures were far above average. Stock throve very well. Cattle and sheep free of disease. Clip of wool above average.

Lanarkshire (Lower Ward).—Wheat, average 40 bushels; straw, 2 tons; seed, 3 bushels. No barley. Oats, average 48 bushels; straw, 1½ ton; seed, 5½ bushels. Harvest began about the usual time. Hay, about 2 tons; quality good; an average of last year; well mixed with ryegrass and clover. No meadow hay. Potatoes less by 2 tons; disease bad; 2 tons good to 4 bad; disease commenced in August. Turnips, average 20 tons; quality good; braird good; one sowing. Pastures were of average growth. Stock throve well. Cattle and sheep free from disease. Clip of wool average.

Renfrewshire (Middle Ward).—Wheat, 40 bushels; quantity of grain good; straw considerably weightier than last year; seed, about 4 bushels. Barley, 45 bushels; quality of grain good; barley is very little grown in this district. Oats, 50 bushels; quality of grain excellent; straw, unless on heavy soils at least a fourth heavier than last season; seed, from 5 to 6 bushels. Harvest was two weeks earlier. Hay, 2 tons; quality of what was early secured, inferior; what was afterwards secured, superior. Timothy hay, fine crop, 2½ tons; mostly secured in fine condition. Meadow hay fully more productive than last year. Potatoes, unless Champions and Magnum Bonums, considerably under last season; these varieties would yield 7 to 8 tons; Regents and other early varieties 3 to 4 tons. Turnips considerably better than last year—20 to 25 tons; brairded well; as a rule one sowing sufficed. Crops were not injured by insects or by weeds. Pastures during the season were of superior growth and quality. Stock throve well, and were exceptionally free of disease. This is not a wool district.

Renfrewshire (Upper Ward).—No wheat or barley. Oats, 36 bushels; average crop of straw, but grain deficient for want of sunshine. Seed, 5 bushels. Harvest began about usual time. Hay, 2 tons; got a good deal of wet weather; colour not quite so fresh as last year. Meadow hay was an abundant crop, and well got. Potatoes not nearly so productive as last year, and all earlier sorts nearly gone with disease; Champions mostly grown in the district; average, both kinds, 4 tons per acre. Turnips were a good crop on dry and well-farmed land; brairded well, and no second sowing required; 14 tons; turnips not sold in this district, therefore it is difficult to state weight exactly. No damage from insects nor from weeds. Pastures were over average growth. Stock throve well, and sold well. No disease among cattle and sheep.

Renfrewshire (Lower Ward).—No information given as to wheat. There is little barley in this district, but yield of that grown may be stated at from 36 to 40 bushels; seed, 3 to 4 bushels. Oats much better than last year; between 6 and 7 bolls of 6 bushels; weight and sample better than crop 1881; straw of better quality; seed, 4 to 5 bushels. The harvest began about the usual time, and crops ready for cutting at this time well secured. Crops on high lands, and those late sown, were damaged by a bad back end. The weather became very wet and unsettled about end of September, and some crops were out and unsecured, it may be said up to Christmas, and consequently were of little value either for grain or straw. These cases were exceptional, but still many acres of grain crops were wasted in consequence. The dilatory farmer had no chance. The active lost less by losing no opportunity. Hay heavier than in 1881, but in many cases spoilt by incessant rain; from 25 to 40 cwt. Meadow hay more productive, and better quality, weather being more favourable for securing it; it is generally cut later than ryegrass hay. Potatoes a fair average; earlies suffered severely from disease, those marketed before September at least 50 per cent., and thereafter whole crop may be said to have been lost; later kinds did not suffer so much, and Champions stood fairly well; 6 to 8 tons average crop. Turnips were much better than in 1881; from 15 to 20 tons; fly did not get hold, which destroyed so many sowings in 1881; in most cases one sowing successful. No damage done by insects, and not beyond the usual by weeds. Pastures were good. Stock did well, and were free of disease. Clip of wool, average; few sheep in the district.

ARGYLLSHIRE (District of Oban).—No wheat. Little or no barley, but in the rare instances when it has been sown, the same answers as are given in the next may be held to apply. Oats, straw more abundant; quality of grain and straw not so good; return 3½ more than last year, or 25 bushels. Harvest was generally about eight days later than last year. Hay about 12 cwt. more than last year; clover was also more abundant. Meadow hay about double that of last year. Potatoes about 2½ tons less than last year; disease made its appearance about the beginning of August. Turnips about 15 cwt. more than last year; quality better; brairded well; only one sowing. No damage by insects. More weeds among potatoes and turnips than usual, but they were kept down, and did no injury. Pastures much better than last year. Stock throve very well upon the whole, and were free of disease. Clip of wool good, and fully average.

ARGYLLSHIRE (District of Lochgilphead).—No wheat, and scarcely any barley. Oats, crop not being yet more than a quarter thrashed, it is impossible to make accurate comparison with last year; crop about average—24 to 36 bushels; straw, 1 to 1½ ton; on the whole, better crop than last year, but not much; seed, 5 to 6 bushels. Harvest began about usual time. Very abundant hay crop; much above the average; clover about the same as last year; yield 1 ton 4 cwt. to 2 tons. Meadow hay much more productive than last year. Early potatoes a complete failure; Champions and Magnum Bonums a fair crop, but small in size; disease prevalent in Earlies, beginning about end of July; crop last year about 6 tons, this year 2 to 3 tons. Turnips on dry and well-drained land, good; on loose peat of retentive nature, bad; brairded well, and no second sowing required; no record kept of the weight of crop. No damage from insects, and not to any extent from weeds. Pastures better than last year. Stock throve well. Cattle were free from disease, but sheep suffered as much as usual from braxy. Quality and quantity of clip of wool, especially the former, above the average.

ARGYLLSHIRE (District of Cowal).—No wheat. Barley, bulky crop, and is now thrashing fairly well; about 36 bushels; but quality is not good, and weight per bushel very low; seed, 4 bushels. Oats may be considered the crop of the season; much above average in bulk, and now thrashing 45 bushels; seed, 5 bushels. Harvest commenced about usual time (23rd August), and was general by 1st September; crops generally well secured and in good condition, though in some cases there was slight sprouting. Hay never been better in district; on well-farmed land yield was 2 to 2½ tons; fine weather in April, May, and June helped to produce this result; quality not of the best, but much the same as last year. Meadow hay was a splendid crop; owing to showery weather in harvest, quality in many instances not very good; where early cut it is excellent. Potatoes were very poor; and putting early and late varieties together, yield would not exceed 3½ tons; quality inferior to former years; disease commenced about 14th July, and among early varieties hardly as many were sound as would seed the ground they grew upon. Turnips not an average—15 tons; brairded well, and no second sowing required, but owing to the wet weather they never got away; quality fair; and with an open winter, a few tons more or less makes little difference. No crops were injured by insects or by weeds; but owing to wet, green crops could not easily be kept clean. Pastures better than they have been for many years; even hill pastures were never better, and stock fattened exceedingly well, and as an instance of the splendid spring and summer, a good many hill sheep were in the fat market in July. No disease among stock. Quality of wool better than the previous years; in bulk was an average clip.

ARGYLLSHIRE (Islands of Islay, Jura, and Colonsay).—Only one farm on which wheat is grown; crop appeared to be fair. Barley an average. Oats were fair, but not thrashing so well as expected; 30 bushels about average; grain and straw excellent quality, and better than last year; seed, 7 bushels. Harvest began about the usual time. Hay about 1¼ ton; quality good, much the same as last year. Meadow hay not quite so productive as last year. Potatoes, Champions and Magnum Bonums were a good crop; all early sorts much diseased—more than half of them; no disease in Champions or Magnum Bonums. The turnip crop is good, better than last year; quality very good; about 20 tons; only one sowing; favourable weather brought them on to the thinning sooner than usual. No damage by insects or weeds. Pastures were better than last year, summer being drier. Stock throve well. Cattle have been free from disease. Sheep have suffered a good deal from braxy. Hill stock healthy; a few farmers still complaining about rot in sheep. Wool was of good quality, and about average.

ARGYLLSHIRE (District of Inveraray).—No wheat or barley. Oats about 26 bushels, last year 24; straw heavy, but quantity of both corn and straw not very good, owing to wet harvest; seed about 6 bushels. Harvest commenced about a week latter than usual. Hay unusually heavy; ryegrass and clover usually grown together; average in district about 4 tons this year; quality not very good generally, owing to excessive rain. Meadow hay (which composes the bulk of hay in the district) was unusually heavy, but not well saved generally. Potatoes not so plentiful a crop this year; would not like to say quantity; probably about one-ninth diseased; began to be affected in August. Turnips were a good crop where well managed; probable average, 12 tons; quality good; brairded well, and did not require resowing. Crops not damaged by insects. No damage done by weeds, except where there was careless farming. In damp ground crops were not so good as last season, owing to heavy rainfall. Pastures were at least generally more luxurious than last year. Stock throve well. Cattle and sheep have been free from disease, with the exception of a few cases of scab among sheep, where small farmers do not understand it. Clip of wool fully an average.

DUMBARTONSHIRE.—Wheat about 26 and 28 bushels; both grain and straw much superior to last year; seed, 2 to 3 bushels, according to soil and date of sowing. Barley so little grown that no estimate formed would be of any value; writer believes there was only one small field of barley in this parish, one of the best in the county for grain crops. Oats 30 to 35 bushels in light hill farms, up to about 40 to 45 on low good land; straw abundant, in some places much laid; quality of grain about equal to last, though a considerable quantity harvested late is soft and inferior; seed, about 4 to 5 bushels on light hill farms, 3 to 3½ bushels on better land. This county varies greatly in class of land, and on farms in the more highland parishes harvest was later than last year; while in low lands, along the valley of the Clyde, it was somewhat earlier, commencing 20th August. Hay from 35 to 40 cwt.; on the whole, not so good as 1881, and much of it saved in inferior condition, owing to excessive rains during hay harvest. Meadow hay grown only in a few parishes, and these reported about one-third more than 1881. Potatoes in better districts 7 tons, in poorer 4 to 5; much disease in early varieties, showing early in July, and spreading with unusual rapidity; in several instances crop entirely lost for market purposes, never dug, but ploughed up in autumn for cattle feeding; Champions, for the first time, in some places showed considerable disease. Turnips from 14 to 17 tons; quality good compared with last year; regular braird; no resowing. No damage done by insects, and little by weeds, although charlock or yellow mustard unusually prevalent in some districts. Pastures were better than last year; grass abundant. Stock throve fairly well; owing to constant rains early in season, stock did not progress so rapidly as the bulk of the grass crop would lead one to anticipate. Cattle and sheep have been quite free of disease. Clip of wool, quality better; quantity average.

STIRLINGSHIRE (Western District).—No wheat. Barley about 5½ bolls; quality not so good nor so prolific; seed about 3½ bushels. Oats about 6 bolls; quality not so good; seed about 4 bushels. Harvest began about eight days earlier, but was much retarded by bad weather, and the crop injured. Hay was a bulkier crop than last year; about 2 tons. Meadow hay was more productive than last year, and well secured. Potato crop inferior, and disease very bad, in many cases the crop not worth digging; the average quantity would be about 3 tons. Turnips a better crop, but not heavy; average about 13 tons. Crops were not injured by insects, but some finger-and-toe was found. Potatoes, owing to disease settlng in early, were overrun with grasses and chickweed. The pastures were more abundant. Stock throve fairly well, better than last year. Cattle and sheep have been free from disease. Clip of wool was of good quality, and rather over the average quantity.

STIRLINGSHIRE (Eastern District).—Wheat, 36 bushels; an average bulk of straw; quality of grain and straw superior; 3 bushels seed. Barley from 25 to 34 bushels; average bulk of straw; quality of grain and straw much superior, on dry field soils, 3 bushels seed; on carse land, barley was in general a poor crop; owing to the dry weather in spring, it was late in brairding, and in many cases the weather broke before it was harvested, which sadly deteriorated both grain and straw. Oats, 40 bushels; considerably above the average; the quality of grain and straw much superior to last year; 4 bushels seed sown. In the district between Dunmore and Larbert, a considerable portion of the crop was unsecured before the weather broke, and in these cases both grain and straw are much inferior. Harvest began about the usual time in the different localities. Hay, 27 cwt.; was inferior in quality, owing to bad weather after being cut, and also to a deficiency of clover. Almost no meadow hay in this district. Potatoes, 6 tons—considerably less than last year, owing to the growth being checked early by disease, which was observed in the haulms about the last week in July; when lifted a half to three quarters of the tubers were diseased; these remarks apply to Regents; Champions and Magnum Bonums were comparatively free of disease, and will average 8 to 10 tons. Turnips, 15 tons; quality similar to last year; the seed brairded well, and no resowing was required. Crops were not injured by insects. A good deal of work was required in keeping annual weeds in check. Pastures were above the average growth; the quality not so good as usual. Stock throve very well in beginning of season, but not well in July and end of season, owing to wet weather. Cattle and sheep have been free from disease. There are few sheep in the district. Wool may be taken as an average clip.

Fifeshire (Eastern District).—Wheat, 38 bushels ; straw, 1½ ton ; seed, 3 bushels. Barley, 40 bushels ; straw, 18 cwt.; seed, 3 bushels. Oats, 44 bushels ; straw, 22 cwt ; seed, 4 bushels. Harvest began at the usual time. Hay, 35 cwt. ; both ryegrass and clover superior to crop 1881. The yield of the potato crop was 20 per cent. less—4 tons ; Champions free of disease ; Victorias and Regents about one-half diseased. Turnips weighed 18 tons ; quality very much better ; brairded well, and no resowing. No damage done by insects. Damage to a small extent was sustained from weeds (shellocks), about the same as usual. Pastures were of average growth, and better quality. Stock throve fairly well. Cattle and sheep were never so free from disease. Clip of wool was inferior, and under average.

Fifeshire (Western District).—Wheat, 30 bushels ; quality very good ; better than last year ; seed, 2½ to 3 bushels. Barley, 38 bushels ; quality under average, but better than last year in both grain and straw ; seed, 2½ to 3 bushels. Oats, 45 bushels ; quality good ; grain and straw where well saved, much as last year, but many acres spoilt in stook on later farms ; seed, 3 to 4½ bushels ; later and higher lands seeding the thicker. Harvest was late, fully a week after usual. Quantity of hay crop 2 tons in 1881 and 1882 ; good both in quantity and quality, where early cut ; damp weather caused much to be cut latter, to its serious deterioration in quality ; quality of crop 1882 not quite so good as crop 1881. No meadow hay. Potatoes fully half of last year ; last year fully 7 tons ; Regents and Magnum Bonums one-third bad ; Champions practically sound ; disease came on about end of July. Turnips, 20 tons, last year 16 tons ; quality on good land, both years, good, but better quality all over this year ; braird good ; only one sowiug required. Crops were not injured by insects. The wet seasons have increased all weeds, especially couch grass and coltsfoot, and such like. Pastures were of average growth. Stock throve fairly well. Cattle and sheep have been free from disease. Clip of wool about average.

Perthshire (South-West District).—Wheat better on dry fields, and all over than last year ; return about 32 bushels, and well got in ; seed, 3 to 4 bushels ; quality of straw good ; not much of this crop thrashed yet. Barley better crop than last year, but grain discoloured by weather ; weight about 50 lbs. per bushel in most cases, and seldom up to standard ; straw much wasted ; produce 38 bushels ; seed about 4 bushels. Oats fine crop in dry field, and inferior in stiff soils ; return about 36 bushels ; weight per bushel 38 lbs., and up to 42 bushels in good land ; bulk of straw greater than last year, but where late damaged by weather ; seed about 5 bushels in carse land, and 6 bushels in high-lying situations. Harvest began at the usual time, but was protracted in many localities by wet weather. The hay crop was a good average for quantity, but damaged a good deal by bad weather ; quantity per acre about 26 cwt. Meadow hay was a fair crop, and where early cut got in in good order. Potatoes were a good big crop, but one-half of the fine varieties destroyed by disease ; Champions and Magnum Bonums were bulky crops. Turnips much better than expected ; average about 15 tons ; good deal damaged by finger-and-toe on some farms, while others were scatheless ; not much fly ; no second sowing required. Crops were not much injured by insects. Damage by weeds not greater than usual. A superabundance of grass throughout the season, but too much wet for feeding well. Stock had plenty of food, but pastures were too soft and succulent, consequently stock did not feed nor thrive so well. Cattle and sheep have been free of disease. Clip of wool more bulky than last year.

PERTHSHIRE (District of Coupar-Angus).—Wheat, straw average; grain below average as to bushels; fair quality; seed about 3 bushels. Barley, seed about 3 bushels, according to state of land—35 to 45 bushels; quality averages better than last year; selling at about 4s. per quarter more. Oats from 40 to 50 bushels; about same as last year; straw a little short, but fine quality; seed about 4 bushels. Harvest commenced a few days earlier than last year—28th August. Hay was generally a full crop, both as to clover and ryegrass; about 2 tons and over; better than last year. No meadow hay. Potatoes were very varied; Regents from 3 to 6 tons; one-third diseased; Champions a good crop, and free from disease; average of 5 tons—3 tons short of last year; Magnum Bonums, a small crop of 4 tons. Turnips were a fine crop—from 20 to 28 tons; good quality; brairded well generally, and did not require resowing. Less injury than usual from insects, and none from weeds. Pastures were of more than average growth and quality, and very superior to last year. Cattle and sheep have been generally free from disease. Some cattle brought lately from Ireland brought pleura into the district, but it is rooted out. Average clip of wool.

PERTHSHIRE (Western District).—No wheat and very little barley. Oats were an average. Harvest began a little earlier than usual. There was a splendid crop of hay. Meadow hay was more productive than last year. Potatoes were a poor crop, more than half diseased. Turnips were an average. Crops were not damaged by insects or weeds. Pastures were above the average. Stock throve very well on them. Cattle and sheep have been free from disease. Clip of wool was very good; weight above average.

PERTHSHIRE (Lower Strathearn).—Wheat, 28 bushels; about the same as last year; quality of both grain and straw much better; seed about 3 bushels. Barley, 32 bushels this year, 36 last year; quality much better, at least 2 lbs. per bushel heavier; straw stiffer; seed, 3 bushels. Oats, 42 bushels; much the same as last year; quality of grain better; straw also stronger and stiffer in the pen, cause of which, drier weather; seed, 4 bushels. Harvest began about the usual time. Hay about 2 tons—5 cwt. more than last; quality, where very early cut and secured before the weather broke, much better than last year; weather was very bad, and a great deal spoilt; those who waited until the weather took up, and did not cut, got the crop well secured, but much too ripe, and much seed lost. Meadow hay a much better crop, and beautifully secured; last year very much spoilt. Potatoes about 5 tons—1 ton less than last year; Regents very much diseased; Champions and Magnum Bonums comparatively free of disease. Turnips about 15 or 16 tons—at least 4 more than last year; quality much better; on some soils a good deal of finger-and-toe; only one sowing required as a rule; very little turnip fly, but found a white worm inside the diseased parts of the finger-and-toe turnips on cutting them up. A great deal of mustard seed brairded in some fields. Pastures much better than last year. Stock of all kinds throve very much better, and have been free of disease. Clip of wool very good, rather over the average.

PERTHSHIRE (Highland District).—No wheat. Barley of average quality; from 30 to 33 bushels; weight from 50 to 53½ lbs.; average quantity sown, 4 bushels; straw excellent. Oats of moderate quality; 36 to 40 bushels; weight 40 to 41 lbs.; average quantity sown, 5 bushels; straw excellent. Harvest about a week earlier than last year, but wet, and leading much retarded in late districts and where late sown. Hay an excellent crop—24 cwt.; well secured; both ryegrass and clover were good, especially the former. Very excellent meadow hay crop, best for many years; well secured; 5 to 6 cwt more than last year. Potatoes very inferior, barely 3 tons; some disease; several dilatory tenants lost more than half their crop from frost; disease where prevalent began early. Turnips very good everywhere; average 23 tons, in some cases as high as 35 tons; no second sowing. Insects did no harm. Ill-cleaned land unusually dirty, and crop slightly injured in consequence. Turnips on dirty land suffered from couch grass, yar, and mustard. Pastures very rank, but not quite so nutritive as last year. Stock throve well, and were free from disease; neither sheep nor cattle killed so heavy off the grass as last year. Wool was good in quality and quantity; from 10 per cent. to 12 per cent. better than average.

FORFARSHIRE.—Very little wheat grown. Barley about 50 bushels, and better quality of grain and straw. Oats, 48 bushels; grain and straw both of better quality. Harvest began eight days earlier than 1881. Hay crop about 150 stones; quality better. No meadow hay grown. Potato crop about 6 tons—about 2 less than last year; large proportion of early sorts diseased—about one-half; disease appeared in July. Turnips about 25 tons; quality very good; crop brairded well. No injury by insects or weeds. Pastures better than last year, both in quantity and quality. Stock throve well, and have been free from disease. Clip of wool average.

ABERDEENSHIRE (District of Buchan).—Very small extent of wheat, not more than 20 acres. Barley or bere equal to last year in grain and straw; about 5 qrs. per acre; about same quality as last year; seed, 3 to 4 bushels. Oats, the principal grain crop, looking a healthy crop during maturity, although yield in grain will not be much over last year; average, 5 qrs.; weight, 40 to 43 lbs.; straw much in excess, but not nearly of such good quality. Harvest commenced about 24th August, three weeks earlier than last year. Ryegrass and clover well mixed; quantity nearly double last year—or 2 tons in all; fairly well secured. Not much meadow hay in this district. Potatoes not so heavy by 2 tons, nor of such good quality; almost all varieties were affected by disease, except Champions, which nearly escaped. The yellow-fleshed turnip crop is one of the best for a number of years, where not affected by disease, of which a good many complained during summer, but fortunately, unless in some cases, has not proved so disastrous as anticipated, whereas swedes in general are a good crop; very little resowing was required; in general the braird came away very fairly; average, 20 tons yellow and 18 tons swedes. No injury by insects, and little or none by weeds. Pastures were far above average, seldom such a good season. Stock throve remarkably well until end of season, when the land got too cold, owing to too much rain. Cattle and sheep were free from disease. Clip of wool over the average.

ABERDEENSHIRE (District of Formartine).—Wheat not grown to any extent. Barley and bere a good crop, with abundance of straw; much of the crop was laid and twisted, that an undergrowth came up; the autumn was humid and sunless, without a breezy day, so that the crop stood long in the stook, and was much damaged in colour and firmness of grain; this year's crop is more abundant than last year's, both in straw and grain, and would be about the same weight as last year—52 to 53 lbs. per bushel; quantity sown, 4 bushels barley and 3 bushels bere. Oats were a heavy crop; straw more abundant than for many years, in fact, after lea, the straw was in some cases over abundant, and was so much laid and twisted that it was with difficulty that reaping machines could be employed to reap the crop—in many cases the scythe had to be used; here also the crop stood long in stook for want of dry and breezy weather, and much of the crop was carried in in very damp condition, so that heating in the stackyard was no uncommon occurrence; quantity, 38 to 40 bushels; grain weighing 42 lbs. per bushel; quantity sown, 6 bushels. Barley harvest commenced about the 28th August, and oats generally by the 5th September. Hay crop heavier—about 2 tons per acre. The rains in the end of June and beginning of July caused the clover plants to grow very fast, which filled up the bottom greatly, and made a good swathe. No meadow hay. Potato crop not so abundant as last year; this year about 5 tons per acre; disease began to show itself in the beginning of September amongst the older sorts, and went on increasing; Champions and Magnum Bonums were free from disease, and good quality. Owing to the dryness of the soil, the laying down of the turnip crop was easily and satisfactorily accomplished, and very little second sowing was required; the plants came away well at first, but by the end of June finger-and-toe commenced to make great havoc in many fields; finger-and-toe has made its appearance in some fields this year that never had any before; the fifth-course shift or rotation, and the want of lime in the land, is blamed for encouraging this fungus; where the sixth-shift, that is, three grasses instead of two years' grasses is adopted, canker does not seem to prevail to the same extent; owing to the prevalence of canker, the turnip crop is below an average. No damage was done by weeds. The season was the best for pasture that has been for some years. Cattle and sheep have done well this year, and were free from disease. Clip of wool above average.

ABERDEENSHIRE (District of Garioch).—Scarcely any wheat grown. The barley crop is above an average, and the yield may be stated at 42 bushels, or 2 bushels in excess of last year; the quantity sown is 4 to 4½ bushels. The oat crop is exceedingly good, and yielding to expectation; the average may be set down at 40 bushels, against 36 bushels of previous year; in consequence of lodging, the weight of the grain is in many cases deficient; 39 to 40 lbs. is not uncommon, but the standing crop reaches 42 to 43 lbs.; quantity sown, 6 bushels. Harvest commenced about the usual time, the last week of August; scarcely any difference between late and early districts. The hay crop is the best we have had for several years, clover predominating, which has decreased the weight and yield of ryegrass seeds; the weight may be set down at 1 ton 14 cwt., or 9 cwt. in excess of last year. No meadow hay. Potato crop is under the average, and tubers small; disease existing in some places, whilst others are exempt; 4½ tons would be about the average. The turnip crop is considerably in excess; the Garioch Turnip Growing Association states their yield of swedish turnips to be 20 tons 18 cwt., against 10¼ tons last year, and green-top yellow 20 tons 14 cwt., compared with 15 tons 7 cwt. of previous crop, remarking in their report that a deal of disease existed on the portion of the crop where land had been wrought on 5th-course shift of rotation; the crop brairded well in some places, whilst in others three sowings were sometimes required, in consequence of attacks by the turnip fly. Land is generally kept clean. Pasture grass throughout the whole season was abundant. Stock throve moderately well, but would have done better had the weather been drier. Both cattle and sheep have been exceptionally free from disease. The clip of wool was an average in quantity and quality.

ABERDEENSHIRE (District of Strathbogie).—Little or no wheat grown, unless perhaps an occasional patch of the red or bearded variety, which is sometimes grown on heavy clays, but more for the sake of the straw than for the grain. The bere and barley crop were about an average, as regards quantity of straw and grain, but the weight of grain did not come up to expectation; the lightness of the grain may be accounted for in consequence of a very severe hurricane of wind on the 1st of August, the result of which was that the crops were greatly broken down, and the barley partially denuded of its "awns"; the yield would be from 36 to 40 bushels, and the weight from 48 to 52 lbs.; the quantity of seed sown is generally about 4 bushels. The oat crop was fully up to the average as regards bulk, but the turn out of marketable grain is much less than the appearance of the crop warranted, there being an unusually large proportion of "tails" or empty hulls; the general average would be about 40 bushels, and the weight from 39 to 42 lbs.; had it not been for the gale in August, the oat crop would have been an exceptionally good one; the quantity of seed sown per acre is generally from 4 to 6 bushels. Harvest began about a week earlier, it being general in the first week of September. The hay crop was about an average as regards both quantity and quality; ryegrass and clover were well proportioned; this crop was secured in excellent condition; the average weight would be about 30 cwts. No meadow hay. The potato crop looked very promising until about the month of August, when disease appeared among the early and common varieties, and at lifting time in October fully a fourth of these varieties were found to be useless, and complaints are now common of rotting in the pits; Champions and Magnum Bonums are entirely free from disease, but about one-third less in bulk than last year; the general yield would be from 4 to 6 tons. The turnip crop has been a source of great anxiety to the farmer, and has turned out, although better than was anticipated, still sadly deficient; swedes, unless in exceptional cases, are not more than half an average crop; yellows are much better, and would be not more than 5 tons under the average; on account of the sharp frosts in May, combined with the ravages of the turnip fly, second and even third sowings had to be resorted to; the average yield of the crop would be about 12 tons for swedes, and 14 for yellows. Unless the turnip crop, no other was damaged to any extent by insects. No unusual damage by weeds. Pasture grass was very abundant, but owing to the very rapid growth a great proportion of the pastures were tramped down with the cattle and destroyed; if house feeding and ensilage silos were more common the grass crop could be much more profitably utilised than in allowing the cattle to tread it into the ground, and only eating a small proportion. Both cattle and sheep did fairly well during the summer, and have been entirely free from disease. The clip of wool was about the average.

BANFFSHIRE (Lower District).—Almost no wheat grown. Barley, 36 bushels; quantity fair. Oats, 35 bushels; crop and quality good; one-fourth more straw than usual. Harvest began a few days later than last year. Hay crop, 24 cwts.; far above average both in quantity and quality. No meadow hay. Potatoes, 3 tons; all sorts diseased, with the exception of Champions—extent of disease one-third. Turnips, 15 tons; crop brairded irregularly, and many fields much injured by frost and fly; several instances of resowing. Less damage from insects than usual; none from weeds. Pastures far above average. Stock throve fairly well; would have thriven better had there been more sunshine. Cattle and sheep have been quite free from disease. Few sheep kept in this district.

BANFFSHIRE (Upper District).—No wheat grown. Crop of barley was bulky as regards straw, but owing to the excess of moisture the quantity of grain was little over an average, or about 36 bushels; quality as regards weight a full average, but colour dark and prices low; seed about 4 bushels. Except in the latest districts, where the crop was decidedly deficient, the oat crop over the county was above average, both in grain and straw, the yield being about 38 bushels, of good quality, weight, and fair colour; average quantity of seed, 5½ bushels. The harvest was rather early than late, but much prolonged on account of the rainfall in September. Hay was unusually heavy, being well mixed with clover, for the retention of which, in the mountain clay soils, the previous mild winter was especially favourable; the average crop would be about 27 cwt. No meadow hay. Potatoes were a poor crop, and partly diseased; the blight showed early in September, but the ravages were less than at first expected; potatoes are not grown as a marketable commodity, the soil being unsuitable; 3 tons per acre would be considered good, but crop did not exceed 2 tons. The turnips are under an average in weight, and would not exceed 14 tons; brairding stiff; second sowings in many cases required, caused in most cases by rain and low temperature early in June; yellows in a good many fields affected with canker, and in some districts finger-and-toe was prevalent; these two evils are undoubtedly caused more by the system of cultivation than by the seasons; the exhausting nature of the five-shift rotation, and the application of large quantities of light manures, rendered necessary by the want of farm-yard dung to manure a fifth part of the farm, has done much to ruin both the farm and the farmer. Weeds are not troublesome. Pastures were particularly abundant throughout the season; the land was well planted with well-mixed grasses, and the abundance of moisture, early assisted by a high temperature from the end of June onwards, maintained a flow of grass throughout the season. Stock, as a rule, throve well, considering the amount of rainfall. Cattle and sheep were free from disease. Sheep do not form so important an item of stock in the district as would afford any reliable data for an answer as to the clip of wool.

MORAYSHIRE.—The wheat crop, both as to quantity of grain and straw, was considerably higher than last year; in the "Laigh of Moray" the quantity of straw was perhaps the highest on record, whole fields were to be seen where the wheat straw was nearly 6 feet in length; a fearful gale of wind on the 2nd August damaged the crop considerably, a large portion of the grain did not fill properly after it, consequently the grain in general is light; the yield is higher than last year; would average about 30 bushels; quality of grain 1 lb. per bushel less than last year; quantity of straw about one-third more than last year, quality about the same; seed from 2½ to 3 bushels. The barley crop, as to grain, is rather under last year, while the bulk of straw is rather above; the gale referred to injured the crop very much; the grain is deficient in plumpness, and is from 1 to 2 lbs. less per bushel than last year's; quality of both grain and straw was greatly deteriorated by the extraordinary rainfall in the latter-half of September, when only a small portion of the crop was secured; the grain began to colour, which lowers its value very much; average, 30 bushels; seed, 3 to 4 bushels. Oats are above average, both as to grain and straw, and in general considerably over last year's crop in bulk of straw; crop was perhaps more injured by the gale than any other, owing to the formation of the ears, each grain being suspended by a separate hanger; these were to a great extent either broken or bruised by the wind, which prevented farther filling of the grain, causing a large proportion of what are termed "shellocks"; yield from 20 to 48 bushels per acre; seed, 3 to 4 bushels. Harvest was general in the last week of August, about a week behind the usual time; the weather was extremely wet throughout, which made the harvest protracted and expensive; the greater portion of the crop was with difficulty secured in middling condition; the rainfall was greater than in any other part of the north of Scotland. The hay crop was perhaps the heaviest on record; growth of grass was extraordinary—clover was most luxurious; for a time this district might have been said to be inundated with grass, the result of moist and very mild weather; the average would be 50 cwts. per acre, in many cases 60; quality very fine. Little or no meadow hay. Potatoes would be from 1½ to 2 tons below last year; would range from 3 to 5 tons; considerable amount of disease, especially among the Victorias; Champions were comparatively free; crop was much injured by gale on 2nd August; disease appeared about the middle of August; from a half to a third of Victorias diseased. Turnips were considerably heavier than last year—fully one-fourth; the quality is very good; weight from 16 to 25 tons; owing to moist weather, the braird came away exceedingly well, and only a small portion resown; there has been a good deal of finger-and-toe and canker, owing to the land being too frequently cropped. No damage from insects, nor in general from weeds; but in a great many cases far too many weeds are to be seen, more especially couch grass; where the soil is light some farmers say that weeds are necessary to prevent it from being blown away. The pastures were much superior to last year both as to quality and growth; pasture was perhaps the most abundant any one remembers to have seen, especially the clover. Stock made very satisfactory progress in the pastures, and have been free from disease. The previous winter having been very mild, and sheep in good condition, consequently the clip of wool was of good quality, and fully average as to weight. The foregoing report applies to the lower district of the county, in which there is considerable variety of soils, partly heavy and rich loam, and partly light, sandy, and very poor soil.

NAIRNSHIRE.—Scarcely any wheat grown. Barley, as compared with last year, quantity of both grain and straw rather over; quality rather less, say 34 bushels; seed about 4 bushels. Oats, quantity rather over; rather less in weight, say 42 bushels; seed, 5 to 6 bushels. Harvest began about two weeks later than usual. Hay, quantity over average; quality better than average. No meadow hay. Potatoes under last year; disease prevalent. Turnips about equal; brairded very irregularly; resowing required in some cases owing to fly. More injury done by fly than usual. No injury done by weeds. Pastures were of average growth and quality. Stock throve well, and were free of disease. Clip of wool average.

INVERNESS-SHIRE (District of Inverness).—Wheat, on best and earliest lands, about 36 bushels; average about 30 bushels; quality fair of grain and straw; in several cases great breadths were lodged, rendering grain and straw less valuable; from 3 to 4 bushels seed, according to quality and condition of soil. Barley, average crop; about 34 bushels; on some early farms quantity and weight of sample exceeded former year; generally returns was better than 1881; 3 to 4 bushels average seed. Oats fully an average on the low grounds, and harvested fairly well, while on the high grounds much of the crops never matured, and was considerably damaged by rains before gathered in; grain in low lands excellent quality; seed, 3 to 4 bushels on early land, 5 to 6 on high land. Harvest began about the usual time, but was considerably protracted by wet weather, which prevailed about the middle of the harvest operations. Quantity and quality of hay excellent—on several farms from 2 to 3 tons quite; crop well-mixed with ryegrass and clover, and was well secured generally. Much of the meadow hay in the west was completely lost, owing to the wet condition of the weather. Potatoes, average about 5 tons—less than 1881; disease prevailed to a slight extent, especially among early varieties, such as Regents; Magnums and Champions have been almost free of disease; disease began in September. The turnips an average; on best lands, 25 tons; braird came all right, and very little second sowing was resorted to; quality excellent. Crops unusually free from insects. The chief objectionable weed which injures grain crops is wild mustard; the damage, however, done by it was not more than usual. Pastures were average growth and quality. Stock throve very well in the early part of the season, especially cattle; later on there was frequently too much moisture, which prevented stock from thriving so well. Cattle and sheep have been quite free from disease. Quality of clip of wool good, and fully an average, which may be attributed chiefly to the open winter of 1881-82.

INVERNESS-SHIRE (District of Beauly).—No wheat. Barley about 3 qrs., as compared with 4½; quality of straw and grain inferior. Oats, 3½ qrs., as compared with 4½; quality inferior; a large increase of straw, of bad quality. Harvest began about three weeks later than an average of years. About 150 stones of hay per acre, as compared with 120 last season; quality good. No meadow hay. Potatoes about 6 tons, as compared with 9 last season; quality good; disease appeared in August among some varieties, but not to any extent. Swedish turnips about 35 tons, as compared to 25 tons; brairded very irregular, and second and third sowing resorted to. A good deal of damage done by slugs, followed more or less by finger-and-toe or club-root. No damage from weeds. Pastures were of more than an average growth; quality inferior. Stock made slow progress, there being a want of general heat and absence of sunshine. Cattle and sheep have been quite free of disease. About an average clip of wool; fair quality.

INVERNESS-SHIRE (Skye).—No wheat or barley grown. Oats were a very good crop, at least a sixth in advance of last season. Harvest began about the usual time. Hay was about the same as the former season. Meadow hay more productive than last year. Potatoes in most cases a complete failure. Turnips were very irregular, and failed entirely in many cases; would be at least a third short, owing to the wet season. No damage by insects or by weeds. Pastures were of average growth and quality. Stock throve well, and were free from disease. Clip of wool about an average, and of good quality.

INVERNESS-SHIRE (District of Fort-William).—No wheat or barley. Oats—seed, 6 bushels; yield, 23 bushels; quality and quantity of crop 1882 under 1881. Harvest commenced about the usual time. Hay crop, 28 cwt.; superior to last year. Meadow hay crop abundant, but a good deal injured by wet. Potatoes, 5 tons; fully half diseased; commenced about beginning of August. Turnips, 18 tons; quality superior to last year; brairded well; no second sowing. No damage by insects or weeds. Pastures were of average growth. Stock did fairly well. Cattle and sheep have been free from disease. Clip of wool both full as to quantity and quality, the previous winter and spring having been mild and favourable to the sheep.

ROSS-SHIRE (Wester Ross).—No wheat, and very little, if any, barley. Oats, average yield 20 bushels; yield and quality generally would have been above the average of years, but the storm and gale of wind of 1st October did great damage to the straw and grain; seed, 6 bushels. Harvest began about a fortnight later than usual. Hay, 1½ ton of ryegrass and clover mixed; quality very good. Meadow hay more productive than for many years, but very much scattered and damaged by storm of 1st October. Potatoes very indifferent, not exceeding 2 tons; size very small, and quality bad; disease appeared early in July, and affected all kinds of seed, the Champions having suffered least. Weight and quality of turnips fully as good as last year, but a good deal injured hy finger-and-toe; yield about 10 tons; brairded well, and no second sowing required; crops were injured by finger-and-toe much the same as last year. On the west, where there is generally so much moisture, green crops, as a rule, are a good deal injured by chickweed and sorrel, but the damage not greater than usual. Pastures were fully better than last year. Stock throve better than for many years previous. No disease of any kind among cattle and sheep. Clip of wool of good quality, and fully above the average.

ROSS-SHIRE (District of Dingwall and Munlochy).—Wheat, a small breadth sown only on finer lands, and on this account quantity and quality somewhat superior to last year; produce, 3 to 4 qrs.; straw about as good as last year; seed from 2½ to 3½ bushels, according as drilled or broadcast. Barley, quantity very variable, from 16 to 52 bushels; quality inferior to average; straw deficient both in quantity and quality; crop never recovered damage sustained from a great gale in July; seed, 3 to 4 bushels. Oats a better crop than 1881, both as regards grain and straw; grain from 4 to 7 qrs., but in some cases great loss by shake in harvest; on some farms straw too rank for fodder, and grain light in weight; seed from 4 to 4½ bushels. Harvest began about the 20th or 25th August, which is about the usual time, but considerably earlier than 1881; much protracted by bad weather. Hay, average 1½ to 2 tons, probably 8 to 10 cwt. more than last year; clover especially plentiful; quality in general good. No meadow hay. Potatoes inferior in quantity and quality; the haulms broken in July by gales; disease appeared towards end of July, and at lifting time about 40 per cent. of Regents and 10 per cent. of Champions proved diseased; average quantity marketable, perhaps about 3 tons. Turnips most unequal; better on whole than last year; finger-and-toe very prevalent, where absent crops heavy, particularly swedes, but taking diseased fields into account, average not more than 14 tons; brairded well; no second sowing required. Damage from weeds not more than usual; rather less wild mustard than usual among cereals; increased expense of labour makes it difficult now to keep the land as clean as formerly. Pastures remarkable for growth, but quality not superior. Store cattle did fairly, but feeding stock not too well. There was one outbreak of pleura, which was immediately stamped out; foot-rot more than usually common among sheep. Quality of wool good, and rather over the average in weight.

ROSS-SHIRE (District of Tain, Cromarty, and Invergordon).—Wheat crop better, both in quantity and quality; average return about 30 bushels; seed about 5½ bushels. Barley was not so good, either in quantity or quality; average return 32 to 34 bushels; about 3 bushels seed. Oats not quite so good, either in quality or quantity; a good deal of light corn; average, 36 bushels; seed, 4 to 4½ bushels. Harvest did not begin generally until about ten days later than usual. The hay crop was considerably better both in quantity and quality than 1881; average, 32 cwt., but on some good land considerably more. No meadow hay. Potatoes not more than three-fourths of last year's crop; average return about 6 tons; nearly one-third of crop diseased, which commenced in August. Turnip crop very variable, but generally better; swedes would average 20 tons, yellows 14 tons; crop brairded fairly well, and in very few cases was more than one sowing required; a good deal of finger-and-toe and canker on some farms. No injury done by insects. The scarcity of labour and high wages have led to a good deal of careless farming, and weeds are increasing rapidly, and causing damage to all crops. Growth of pastures never better, but stock did not thrive better than usual, owing to the frequent wet weather. No disease among cattle and sheep. The quality of wool was good, and over the average.

SUTHERLANDSHIRE.—No wheat. Barley, 6 to 8 bushels short, and also lighter; quality and straw good. Oats were a very heavy crop, but were laid and twisted, and in many places there was a great deal of second growth; yield about same as last year; there is much more straw, but it is generally of bad quality. Harvest began about the usual time. There was a good crop of hay; in many cases clover was thinly planted. Meadow hay was a more productive crop than last year. Generally the potato crop was about the same; disease commenced early in all kinds grown, except Champions; in many cases from one-third to one-half of the crop was destroyed. Turnips were hardly an average. No damage done by insects. On wet and damp lands weeds did considerable injury to the turnip crop. Pastures were better than last year. Cattle throve well, but sheep not quite so well, in consequence of the season being so wet. Cattle and sheep have been quite free from disease. Wool an average clip.

CAITHNESS-SHIRE.—No wheat and very little barley grown. Bere, 33 bushels. Oats, 32 bushels; straw of average weight. Harvest began about the usual time. Hay crop fully an average, and fair proportion of clover; weight, 25 cwt. Little meadow hay is grown. Potato crop very bad; disease appeared in July, and tubers made little progress afterwards; crop will not exceed 3 tons. Turnips very deficient, owing to rains in June; those sown before end of first week in June a good crop; some of the later sown an entire failure; average will not exceed 12 tons. No damage by insects, except in so far as finger-and-toe appeared, but to rather a less extent than usual. No special injury by weeds. Pastures better than 1881; stock throve fairly on them, and were free from disease. Quality of wool, fair; under an average.

ORKNEY.—No wheat, and very little barley grown. Oats a good crop—about 36 bushels; weight, 42 lbs.; straw good and plentiful; seed, 4 to 5 bushels. Harvest began ten days earlier than usual. Hay crop good; quantity fully an average of former seasons; clover good. Almost no meadow hay-Potatoes very deficient; a great deal of disease, which commenced very early; quality fair. Turnips good in general, although some suffered from anbury; crop brairded well; no second sowing required. No injury to crops by insects or weeds. Pastures fully an average, of good quality. Stock throve well, and were free from disease. Clip of wool good, and an average.

SHETLAND (District of Lerwick).—No wheat. Barley average crop; 50 bushels; quality better than last year; straw better as to quantity and quality, and above average; seed usual, 2½ to 2¾ bushels. Oats, average 20 bushels; quality not so good as last year; straw over average; seed, 3 to 3½ bushels. Harvest began a fortnight before the usual time. Hay less than last year, and considerably below average; winter was very stormy, and the land was more or less washed with salt spray, which always damages young grass and clover. Meadow hay was a good crop; above average, and more than last year. Potatoes about 3¾ to 4 tons—about the same as last year; quality average; disease slight—commenced about 10th August. Turnips much better than last year, both in quality and quantity; average up to 20 or 21 tons; the crop brairded fairly well, and no second sowing required. No damage done by insects nor by weeds, except a strong growth of wild mustard among the oats. Pastures were above the average growth; quality average. Stock throve very well, and were free from disease. Clip of wool, quality good, and quantity average.

SHETLAND (Island of Unst).—No wheat grown. Bere, straw light; grain fairly good, but hardly up to average. Oats a heavy crop, especially after lea, oats and bere for last three years have been light, especially as regards straw after turnips and potatoes; weight, 41 to 44 lbs.; yield, 38 bushels; straw abundant, and very rank; brairded well, and maintained its growth all through; seed from 5 to 6 bushels. Harvest began about 30th August, same time as last year, and some days earlier than an average of last ten years. Hay generally very short, although on some places an average crop; on others almost a failure; clover also short, owing to exceedingly moist and open winter of 1881–82, which seemed to rot the young roots. Meadow hay fully an average, but generally damaged by exceedingly wet weather during August and September, which prevented its being properly cured. Potatoes generally considerably under average in bulk; quality good, but a considerable deal of disease in some places; many farms were entirely exempt, while on others the disease was exceptionally bad; it appeared early in July, and mostly on low-lying places, valleys especially. Turnips were an excellent crop, and quite an average; quality good; brairded well; no second sowing. No damage was done by insects, but weeds were troublesome, owing to the moisture. Permanent pastures were abundant, and quite up to average. The winter was mild, and pastures never got a check. Stock throve remarkably well, and were quite free from disease. Clip of wool, quality good, and weight about an average.

METEOROLOGY OF 1882.

As regards temperature, the outstanding feature of the weather of 1882 was the unwonted high temperature of the first three months, and low temperature of December, the temperature of the intervening months showing no unusual departures from the mean temperature of the respective seasons. The annual rainfall was generally above the average, the amounts varying from 33 per cent. above the average at Dunrobin to 10 per cent. below the average in the south of Skye.

JANUARY.—The mean temperature for Scotland, taken as a whole, was 4°·5 above the average of the month, being thus 14°·5 warmer than January 1881. This was the mildest January since the Scottish Meteorological Society commenced its operations. As regards the north-east of Scotland, only two milder Januarys have occurred since 1764, viz., 1796 and 1846, which were respectively 1°·4 and 0°·4 warmer than that of 1882. As happens in mild winter weather, the greatest excess of temperature was in strictly inland districts, where in several cases it amounted to upwards of 5°; and the least on or near the coasts, the excess being only 2°·5 at North Uist, Bell Rock Lighthouse, and the Mull of Galloway. A remarkable point in connection with this weather was the high barometer with which it was accompanied, atmospheric pressure being fully the third of an inch above the average. Since, however, mean pressure was nearly half an inch higher in the south than in the extreme north, it followed, from the well-known law of the winds, that S., S.W. and W. winds prevailed for the unprecedented number of twenty-three days, and blew with a force also unprecedented, being fully two-thirds above the average wind-force of January. Hence the extraordinary high temperature of the month.

To the south of the Grampians, the rainfall even in the west was under the average, the deficiency being greatest in the east, from Buchanness to the mouth of the Tweed, where it was from 54 to 90 per cent. less than the average of the month. In Galloway the rainfall was only about half the average, and in Clydesdale a third. To the north of the Grampians, the rainfall was irregularly distributed, considerable districts being slightly under the average, but extensive districts being above it, though generally to no great extent. At Thurso, Lairg, and Roy Bridge, however, the rainfall was a half more than usual.

FEBRUARY.—This is the second month in succession whose mean temperature was the highest recorded by the Scottish Meteorological Society. The following are the mildest Februarys since 1764, with their excess of temperature above February 1882,—1779, 4°·9; 1790, 1°·7; 1797, equal; and 1846, 2°·2. Over

Scotland, the month was extremely mild, the greatest excess of temperature above the average being fully 5° in strictly inland situations, as usually happens in such cases, and the least 3° in the outlying islands and promontories. Again, atmospheric pressure was greatly higher in the south than in the north, from which resulted a prevalence of S., S.W., and W. winds on eighteen days out of the twenty-eight, which is very greatly above the average, and these mild winds blew with a force also greatly above the mean, thus bringing about the high temperature of the month.

Over the whole of the eastern seaboard, from the Pentland Firth to the Tweed, and generally for a considerable distance inland, the rainfall was much below the average, the deficiency varying from 33 to 81 per cent. It was also under the average on the east side of the Firth of Clyde from Rothesay to Ballantrae, and in detached districts in the counties of Argyll, Inverness, Ross, Sutherland, and Caithness. On the other hand, in inland situations south of the Grampians it was above the average, and in the central districts of the counties of Ross and Inverness, the greatest recorded excesses above the average in percentages being 143 at Glenstrathfarrer, Inverness-shire, 90 at West Grange, Fife, and 86 at Wanlockhead.

MARCH.—Over the greater part of Scotland, the weather was either as warm as, or warmer than any March since 1855, being thus the third month in succession of remarkably mild weather. From 1764 there were nine warmer Marches than the March of 1882, its temperature therefore was not so much in excess of the average as that of the preceding two months. The excess was distributed over the country in a singularly uniform manner as regards inland and coast situations, with however a tendency to a less excess in the extreme north, the excess at North Unst being 1°·2, or only a third of the general excess. In Farö temperature was about the average, but in Iceland it was six degrees below it. It is scarcely necessary to add that atmospheric pressure was again greatly in excess in the south, as compared with the north, the difference being about the third of an inch; and with this arrangement of the pressure, S., S.W., and W. winds prevailed on twenty-one days, and blew with great force.

Excepting the north-east of Scotland, from Fraserburgh to the mouth of the Tay, and extending but a short distance inland, the rainfall of March was everywhere above the average; and over great breadths of country it was unusually large. The heaviest quantities of rain fell over the central districts, extending from Lairg, in Sutherland, to Lanark, where at many places from twice to thrice the usual rainfall was recorded. It was particularly large in Eastern Ross-shire and adjoining parts of Sutherland and Inverness-shire. Along a tract stretching from

Rothesay to Douglas Castle and thence to Stranraer, the rainfall did not exceed the average more than about 20 per cent. Thus, while March resembled the two preceding months in its higher temperature, it afforded a striking contrast to them in the very heavy rainfall which, with the exception of the two districts referred to, greatly interrupted farm work in the agricultural districts.

APRIL.—The temperature was under the average in all parts of the country, the least deficiency, about 0°·5, being in Shetland, Skye, and Galloway, and the greatest, about 2°·5, in the inland districts between the upper parts of Strathspey and the River Forth. The rainfall was very unequally distributed during April. In Orkney and Shetland it was about a fifth under the average, and it was also under the average in detached parts of the counties of Caithness, Ross, Inverness, Perth, Argyll, and Renfrew. Over the whole of the west, from the Clyde to Cape Wrath, it was either under the average, or but slightly above it. On the other hand, in the east, from Dunrobin southwards, it was above the average, and very largely so at all places situated at no great distance from the coast. It rapidly diminished inland, so that along the watershed it did not differ much from the average of the month. The following percentages above the average will indicate the districts where the rainfall was very excessive:—Inverness, 104; Keith, 141; Drum Castle, 162; Laurencekirk, 155; Barry, 144; St. Andrews, 156; Loch Leven, 110; Smeaton, 138; Haddington, 128; and Culross, 124. Nowhere over the high grounds of the interior did the rainfall much exceed the average. The heavy rainfall was altogether restricted to the lowlands near the east coast; in other words, to the great agricultural centres; and as in the same districts temperature was from 1°·5 to 2°·5 under the average, the weather of the month was not propitious to the agriculturist. The weather over the west and north was more propitious, the rainfall there being moderate or even small, and the temperature but little below the average.

MAY.—Excepting Strathdon and Strathdee, Perthshire and Forfarshire, where the weather was very slightly colder than usual, temperature was everywhere above the average. In the east the excess did not quite amount to a degree, but in the west it was higher, the excess being 3° on the north-west coast and the South Hebrides, and diminished southwards to 1°·5 in Galloway, and northwards to 1°·2 at Lerwick. In Iceland temperature was 4°·8 under the average.

The rainfall was unequally distributed, being above the average in eastern and central districts from the Tweed to the Spey, in Morven and islands to the west and south, the Hebrides, Ross-shire and East Sutherland. The greatest excess, about three-fourths more than the average. occurred in Mull and Tiree, and a half more at Sligachan, the west of Perthshire, and the east of Fife. In other districts it was under the average, the greatest deficiency being in Shetland and Aberdeenshire, Loch Ness, the middle of Ayrshire and Dumfries, where however it amounted only to half the average and even less over large districts.

JUNE.—In Shetland temperature was nearly a degree above the average, but elsewhere it was under the average. The deficiency was least in Orkney, the Hebrides and west generally, and greatest in central and eastern districts, where it was from 1°·5 to 2°·2 colder than the mean of the month.

In Shetland and the west generally, with the exception of Argyll, the rainfall was either under the average or not very much above it. It was also generally moderate in amount in the highlands of the interior. The heaviest rainfalls were recorded in middle Tweeddale, the amounts at Jedburgh being 160 and at Hawick 137 per cent. above the average; along the whole of the east coast, from the Tay northwards round by the Moray Firth to the north of Orkney, the largest percentages above the average being 100 at Laurencekirk, 107 at Cluny Castle, 104 at New Pitsligo, 100 at Dunrobin, 129 at Watten, 95 at Kirkwall, and 140 at Start Point Lighthouse. Except to the north of Inverness-shire and along several of the river basins opening eastwards, the heavy rains did not extend far inland. The rainfall was nowhere excessive on either side of the Firth of Forth. Combining the temperature and rainfall results, the weather of June was most favourable to agriculture in Shetland, and least favourable in Tweeddale.

JULY.—The mean temperature was nearly the average of the month over the country as a whole. It was, however, very unequally distributed. To the north of the Grampians it was everywhere above the average, the excess becoming gradually greater on advancing northward, till in Orkney and Shetland, temperature during this important month for the growing crops was fully 2° above the average of the month. During the past twenty-six years only two warmer Julys have been experienced in these northern parts, viz., in 1868 and 1873, which were respectively 0°·2 and 0°·5 warmer. Temperature was about half a degree above the average over a broad district extending from the mouth of the Tay to Eyemouth, and stretching quite across the whole country in a W.S.W. direction; whereas northwards from this warmer region to the Grampians, and southwards to the Solway, the weather was generally half a degree colder than usual.

In the lower district of the Tweed, the south coasts of the Moray Firth, the extreme north of Sutherland and parts of

Shetland and Orkney, the rainfall was less than the average, but in no instance to any great extent. Everywhere else it exceeded the average, and over very extensive districts the extent was large. Over the southern districts draining into the Solway the excess varied from 87 to 164 per cent.; on the Firth of Clyde, from 55 to 118 per cent.; over West Perthshire and Argyll, from 60 to 110 per cent.; and the following large percentages above the average were recorded, 152 at Drum Castle, 119 in South Uist, 122 at Dunrobin, and 83 at Lochbroom. Thus July was an unusually dry and warm month in the extreme north; whilst it proved exceedingly wet and somewhat colder than the average to the north of the Solway and the south slopes of the Grampians.

AUGUST.—Over the whole of the eastern side of Scotland the temperature was above the average. The greatest excess, about 1°·5, was on the coast, and the excess gradually diminished on advancing westwards to nearly the average along the watershed of the country. On the west, temperature was slightly under the average. The greatest deficiency, amounting to nearly a degree, being in the extreme north-western and extreme south-western districts.

Excepting a few detached patches in the counties of Kirkcudbright, Ayr, South Hebrides, Ross, Sutherland, and Caithness, where the weather was slightly wetter than usual, the rainfall was everywhere under the average, in many parts of the country largely so. The deficiency in the rainfall was greatest in the east, from Dornoch Firth southwards, the amount there being generally from a third to a half short of the average. Hence, from Shetland to the Tweed, the weather of August was considerably above the average as regards temperature, sunshine, and the other characteristics that concern the ripening of the grain crops.

SEPTEMBER.—In Shetland temperature was about a degree higher than the average, and in Orkney about the average. This is the fifth month in succession during which the temperature of these northern islands was decidedly above the average, thus placing the crops of these regions under unusually favourable weather conditions. In these four months, from June to September, the temperature of the sea was higher in Orkney than on any previous year, being 2°·1 above the average of the months. Everywhere else in Scotland temperature was under the average, being 1°·1 on the mean of all Scotland. As regards the mainland, the deficiency was least in the north and greatest in the south, being 1°·5 from Berwickshire to Wigtownshire.

The rainfall was above the average in Wigtownshire, Argyllshire, South Hebrides, Shetland, Orkney, and in several small detached districts. But the outstanding feature of the rainfall of the month was the large amount which fell over the district lying between the Spey and the Ness, the excess above the average being 159 at Culloden and 116 per cent. at Inverness. The greater part of this large precipitation fell during a heavy north-easterly storm on the 15th and 16th. Elsewhere the rainfall was under the average, the driest weather being experienced in inland districts—in the east from Aberdeen southward, in Strathclyde, and in Nithsdale and districts to the eastward.

OCTOBER.—October was a genial month, the temperature being above the average in all parts of the country. The excess was least in the south, where on the Tweed and Solway it scarcely exceeded a degree; but the relatively warm temperature increased on advancing northward, till in Shetland it was nearly 3° above the average; and in Farö it was 5° warmer than usual. In connection with this high temperature in the north, it may be of interest to note that the temperature of the sea in Orkney was 54°·2, being 1°·6 above the average, and higher than that of any October since 1857, when it was 54°·5. In Farö the temperature of the sea was 50°·1, being 2°·1 above the mean, and higher than has been previously recorded in any October.

If a line be drawn from Fraserburgh southwards, passing Fettercairn, Dunkeld, Ochtertyre, Dollar, Haddington, and Milne Graden, the rainfall over the strip of country to the east of it was above the average of October, but nowhere to any very serious extent, the largest excess, about 40 per cent., being in eastern Perthshire and in the centre of Berwickshire. Elsewhere the rainfall was under the average, the driest weather being north of the Grampians, where at many places the rainfall only amounted to from a half to a fourth of the average. South of the Forth and Clyde the amount was generally a third less than the average. Hence, during this important month for the ingathering of the grain crops in the later districts of the country, the weather was very favourable, the only exception being the long narrow strip of country in the east (already referred to), where the rainfall was above the average. This is the third year in succession when unfavourable weather for the ingathering of the crops has been experienced in the later districts of Berwickshire and of the eastern half of the Lothians.

NOVEMBER.—On the mean of Scotland temperature was 1°·3 below the average. The greatest defect from the mean was in north-eastern and central districts, where in several places it amounted to or exceeded 2°. The deficiency was least in the extreme west and north, where it approached the average, and in one or two cases slightly exceeded it. Thus, temperature was 0°·6 at Barra Head, 0°·3 at Monach, and 0°·8 at North Unst, above the average; and still farther north, 1°·6 in Farö.

The rainfall was everywhere above the average, except in Berwickshire, the high grounds of Mid and East Lothian, a narrow strip from Loch Ness to Tarbetness, the extreme west of Sutherland and Orkney, and parts of Skye—the deficiency in all these cases not exceeding a fourth. The excess was greatest at strictly western stations, from Ardnamurchan southwards and along the Firth of Forth above Edinburgh, where in several places fully double the average of the month was recorded. It was also large in central districts, from Upper Nithsdale northwards through the counties of Ayr, Renfrew, Lanark, Dumbarton, Stirling, Fife, Perth, and the upland districts of Forfar, Kincardine, and Aberdeen. To the north of the Grampians and Morven the rainfall was not very greatly in excess.

DECEMBER.—The temperature was much below the average, the month being in truth one of the eight coldest Decembers since 1764, the mean temperature of which fell more than 5° below the average. Of these eight cold Decembers four have occurred quite recently, viz., 1870, 1874, 1878, and 1882, the temperatures of which were respectively 5°·6, 7°·5, 8°·2, and 5°·5 under the average. The greatest relative cold occurred on the higher districts of the Grampians, and thence northwards to the Moray Firth, the deficiency at Dalnaspidal, Kingussie, Braemar, Logie-Coldstone, and Nairn, being about 6°·5. Over upland districts in the south and in the north of Scotland the frost was on the average from 2° to 3° less severe than on the slopes of the Grampians. As regards the coast the cold was greatest from Montrose to Berwick, where it was from 1° to 2° greater than in other districts quite open to the sea. The lowest temperature recorded at the stations of the Scottish Meteorological Society was −7°·8 at Braemar on the 15th, which is lower than any temperature that has occurred at that elevated station since 25th December 1860, on which occasion the thermometer fell to −11°·0.

The rainfall (including melted snow) was under the average over the west and higher districts of the interior, except a somewhat broad district stretching from Peeblesshire to Cantyre. Everywhere in the east, from Berwick to Shetland, the precipitation—no inconsiderable part of which was snow—was unusually large. Agricultural outdoor work was at a standstill, and railway traffic was to a large extent interfered with. As the snowstorms were from the E. and N.E., the largest amounts were recorded on the east coasts and on the south foreshores of the Firths of Forth and Moray, where at many places the rainfall was double the average, rising at Aberdeen and near the coast of Mid and East Lothian to 150 per cent. above the average. The rainfall was not excessive at any considerable distance inland, except in the basin of the Tweed.

As regards January, February, and March, when the temperature was unusually high, and December, when it was so very low, the following figures show the departures from the averages of the previous twenty-five years of the different winds, the + sign indicating an excess, and the − sign a deficiency:—

	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm var.	Pressure.
										Lbs. per sq. ft.
January, .	−1	−1	−1	−1	0	+2	+4	−1	−1	+1·04
February, .	−1	−1	0	−2	0	+1	+3	0	0	+0·87
March, .	−1	−2	−2	−1	−1	+3	+6	−1	−1	+1·69
December, .	0	+1	+3	0	0	−3	−2	+1	0	+0·09

Thus the months of high temperature were characterised by an unusual predominance of south-westerly winds, these winds prevailing for the quarter on fifty-three days, being nineteen days more than the average. In no year since the Scottish Meteorological Society was established has there occurred so extraordinary a predominance of south-westerly winds, nor has any winter quarter shown so high an average temperature, which was 4°·8 higher than the average. On the other hand, the south-westerly winds, to a large extent, failed in December, and their place was taken by north-easterly winds, under the influence of which temperature fell over a large part of Scotland to 6°·5 below the average.

In Shetland and Orkney harvest commenced from a week to a fortnight earlier than usual, a result due to the continuously higher temperature maintained in these northern islands from May to October. Harvest began about a week before the average time on both slopes of the Grampians from Peterhead to Lochtay. On the other hand, harvest was from a week to a fortnight later than the average over Galloway, Ayrshire, and the Upper Ward of Lanarkshire. In this district the rainfall for the three months ending September was heavier than elsewhere, and particularly heavy in the month of July. In the other districts of the country harvest began about the usual time. Much damage was done to the crops in the later districts by the stormy and broken weather which set in about the end of September.

The wheat crop is everywhere reported to have been an average, and in a large number of cases a full average. The crop of barley was similar, except in Sutherland and Ross-shire, where it was under the average.

Oats were nearly everywhere a good crop, the exception being the districts of Tain, Beauly, Fort-William, Nithsdale, and Ayrshire, where the quality of the grain was inferior; and in

Nithsdale straw also was inferior, owing to the cold, damp weather which prevailed.

The turnip crop generally was a fine one, being nearly everywhere above an average, the excess in several cases being from a fourth to a third. The exceptions were Caithness and Sutherland, where the crop was damaged by the heavy rains of June; Strathbogie and Banffshire, where the frosts of May and fly damaged the crop; and Nithsdale, where the crop was less injured by insects than by the wet weather and weeds.

Potatoes were everywhere less than an average crop, the deficiency being greatest in the central part of Scotland lying between the Grampians on the one hand and the Lead and Lowther Hills on the other, where in many cases the crop was from a fourth to a third below the average. This same extensive and important agricultural district suffered most from disease, whose ravages overspread the whole country. In many parts of this district the loss from disease amounted to half the crop, and in some cases more than three-fourths of the crop was lost. The district which suffered most heavily was the whole of the west slope from the district of Cowal to the Mull of Galloway. In Ayrshire the crop was nearly altogether lost, whereas in Nithsdale, on the other side of the range of hills, only a third was diseased; in the latter district the rainfall was much less during the three months ending October. A similar immunity from excessive rains was enjoyed to the west of Inverness during the same critical season, and there potatoes were but little diseased. In the great majority of cases Champions and Magnum Bonums showed no disease, and in no case as regards these two sorts was there more than only a little disease; and it deserves notice that the little disease that did occur was mostly in the district to the south of the Grampians, where the common sorts of potatoes were so very badly diseased.

AGRICULTURAL STATISTICS OF SCOTLAND.—Returned upon 5th June 1882.—(*Extracted from the Government Returns.*)

TABLE No. 1.—Total Acreage under each kind of Crop, Bare Fallow, and Grass, in each County of Scotland.

Counties.	Total Acreage under Crops, Bare Fallow, and Grass.	Corn Crops.							Green Crops.							Clover, Sanfoin, and Grasses under Rotation.	Permanent Pasture or Grass not broken up in Rotation (exclusive of Heath or Mountain Land).	Flax.	Bare Fallow or Uncropped Arable Land.
		Wheat.	Barley or Bere.	Oats.	Rye.	Beans.	Peas.	Total.	Potatoes.	Turnips.	Mangold.	Carrots.	Cabbage, Kohl-Rabi, and Rape.	Vetches, &c.	Total.				
	Acres.	Acres.	Acres.	Acres.	Acres	Acres	Acres	Acres.	Acres.	Acres.	Acres.	Acres	Acres.	Acres.	Acres.	Acres	Acres.	Acres.	Acres.
1. Aberdeen	606,086	71	17,580	196,155	426	237	356	214,825	8,094	92,649	3	91	97	3,096	104,030	258,472	28,213	1	545
2. Argyle	122.071	2	2,751	20,666	675	367	17	24,478	6,883	5,565	55	27	163	64	12,757	20,647	61,824	—	2,365
3. Ayr	319,529	3,715	3,984	52,050	298	1,543	11	61,631	8,953	7,849	588	357	230	164	18,141	97,059	141,278	—	1,420
4. Banff	168,062	231	8,385	53,880	176	196	46	62,914	2,582	25,353	—	4	15	1,054	29,008	65,655	10.122	2	361
5. Berwick	194,631	5,894	19,274	36,446	64	2,221	352	64,251	2,746	29.704	169	11	432	869	33,931	57,753	38,385	—	311
6. Bute	25.207	84	487	5,014	53	151	12	5,801	1,313	1,425	7	2	19	68	2,834	6,514	9,900	—	158
7. Caithness	106,030	15	1,513	34,627	122	2	36	36,315	2,008	14,020	—	—	70	661	16,759	26,924	25,359	—	673
8. Clackmannan	15,827	631	1,090	3,261	1	762	7	5,752	355	959	15	—	27	82	1,438	3,671	4,661	—	305
9. Dumbarton	46,747	1,272	346	8,719	40	384	2	10,763	2,553	1,508	29	7	74	155	4,326	13,880	17,673	3	102
10. Dumfries	235,691	221	1,647	49.266	82	99	8	51,328	5,208	20,632	62	26	336	241	26,505	66,931	90,652	—	280
11. Edinburgh	136,095	5,078	10,428	23,466	35	480	63	39,550	6,553	11,876	17	43	620	1,133	20,242	31,036	44,952	—	315
12. Elgin	105,367	2,802	14,360	22.627	992	78	62	40,921	3,230	16,648	6	2	22	500	20,408	38.280	5,602	—	156
13. Fife	248,546	13 024	28,742	41,001	1.414	2,473	12	86,666	16,290	27,937	18	15	80	1.250	45,590	61.654	52,771	—	1,865
14. Forfar	253,937	9,307	31,696	53.173	423	1,057	50	95,706	16,770	34.123	12	70	94	1,231	52,300	80,331	25,219	—	381
15. Haddington	116,855	9,989	15,492	17,478	34	2,438	126	45,557	7.656	15,827	33	167	147	722	24,552	28,281	17,560	—	905
16. Inverness	129,810	38	8,731	30,908	928	13	94	40,712	8,245	11.495	6	—	5	164	19,915	28,114	40,309	—	760
17. Kincardine	120,676	598	12,006	31,688	121	778	39	45.230	3,410	18,133	—	22	20	508	22,093	46,240	6,983	1	129
18. Kinross	31,552	126	1,139	5,824	6	38	—	7,133	718	2,786	—	8	37	60	3,609	10,152	10,657	—	1
19. Kirkcudbright	179,835	162	639	31,991	28	160	2	32,982	2,638	14,516	51	37	518	100	17,860	72,690	56,241	—	62
20. Lanark	251,121	3,592	874	46,905	39	1,489	30	52,929	7,669	9.151	20	51	536	1,369	18,796	64,713	113,989	11	683
21. Linlithgow	59,575	1,478	4,665	10,918	9	863	7	17,940	2,280	3,960	8	5	43	355	6,651	12,533	21,741	6	704
22. Nairn	26,463	9	3,156	5,917	246	1	30	9,359	617	4.201	—	—	—	53	4,871	10,031	2,124	—	78
23. Orkney	110,597	—	6,026	32,330	—	1	26	38.383	3,221	14,164	—	—	57	297	17,739	31,646	21,686	—	1,143
24. Shetland	58,489	—	2.610	8,123	—	—	—	10,733	3,313	869	—	—	197	2	4,381	761	41,686	—	928
25. Peebles	42,447	1	1,183	9,263	9	6	73	10,535	671	4.748	—	—	333	135	5,887	12,044	13,977	—	4
26. Perth	346,083	7,498	24,454	71,136	385	3,338	118	106,929	17,723	31.837	30	17	166	947	50.720	101,731	84,239	3	2,461
27. Renfrew	94,638	2,819	279	14,375	35	569	10	18,087	4,634	2.172	35	17	170	203	7,231	21,148	47,888	—	284
28. Ross & Cromarty	133,918	2,956	13,407	31,554	839	33	68	48,857	9,728	16 784	16	2	13	787	27,330	38,214	19,028	—	489
29. Roxburgh	181,793	2,358	15,007	33,414	197	909	121	52,006	2.133	26,045	49	5	544	573	29,349	56,300	43,889	—	249
30. Selkirk	23,244	36	685	4,683	1	9	9	5,423	211	2,821	—	—	174	82	3,288	7,428	6,730	—	375
31. Stirling	114,543	2,786	4,846	20,345	76	3,389	8	31,450	4,066	4,589	16	15	81	407	9,174	25,220	46,679	64	1,956
32 Sutherland	31,638	68	2,406	8.114	102	—	31	10,721	2,061	3,385	—	—	10	42	5,498	7,870	7.393	—	156
33. Wigtown	146,730	2.191	2,346	34,063	118	590	—	39,308	2.615	16.076	249	216	154	168	19,478	62,993	24,480	1	470
Total	4,783,838	79,082	262,234	1,049,380	7,974	24,674	1,826	1,425,170	167,147	493,807	1,494	1,217	5,484	17,542	686,691	1,466,916	1,183,890	92	21,074

TABLE No. 2.—Number of Horses, Cattle, Sheep, and Pigs, in each County of Scotland.

Counties.	Horses (including Ponies).			Cattle.				Sheep.			Pigs.
	Used solely for Agriculture, &c.	Kept solely for Breeding.	Total.	Cows and Heifers in Milk or in Calf.	Other Cattle.		Total.	1 Year Old and above.	Under 1 Year.	Total.	
					2 years of Age and above.	Under 2 Years of Age.					
1. Aberdeen . . .	20,528	5.210	25,738	40.433	37,585	73.146	151,164	92,978	36.006	128.984	9,800
2. Argyle . . .	4,312	2.874	7,186	22.643	15.773	22,632	61.048	717,961	299,718	1,017,679	4,874
3. Ayr	6.415	2 349	8,764	43,683	14,366	30,762	88.811	212,491	133.865	346,356	15,054
4. Banff	6,329	1,614	7.943	12,674	6,263	22.020	40.957	30,394	18,842	49,236	3,629
5. Berwick . . .	4,122	1,278	5,400	3,285	4,496	7,104	14,885	148,317	116,294	264,611	4.825
6. Bute	837	285	1.122	3,328	1,529	2,921	7,778	26,762	14,795	41,557	759
7. Caithness . . .	4,046	1,038	5,084	6.906	2,920	10 079	19,905	60,265	30,257	90,522	1,859
8. Clackmannan . .	523	166	689	1,355	898	1,280	3,533	5 958	3,126	9,084	2,233
9. Dumbarton . .	1.280	611	1,891	6,754	2,371	3 517	12,642	46,540	22,947	69,487	792
10. Dumfries . . .	5,360	1,781	7,141	16,777	13.430	21 467	51,674	307,445	185,174	492,619	13,059
11. Edinburgh . . .	3,292	708	3,995	10,526	3,144	3,724	17,394	91,557	60,975	152.532	6,279
12. Elgin	4,022	1,127	5,149	6.788	3,453	12.512	22,753	32,700	17,449	50,149	4.008
13. Fife	7,663	2,323	9,986	8,814	14,220	15.504	38,568	46,393	28 879	75,272	6.393
14 Forfar . . .	8,257	1.816	10,073	11,677	15,522	17,984	45,183	84.555	38,185	122,740	6,908
15. Haddington . .	3 259	497	3,756	1,609	4.389	2,281	8.279	69,749	44,749	114,498	2,827
16. Inverness . . .	6,827	2,122	8,949	20.300	9 277	22,278	51.855	502,664	201,290	703,954	3,531
17. Kincardine . . .	3,884	853	4.737	6,687	5.311	12,164	24,162	17.986	6,448	24.434	2,740
18. Kinross . . .	704	338	1.042	1,017	1 371	3,245	5,633	16,967	9,727	26,694	722
19. Kirkcudbright . .	3,844	1,546	5,390	12 114	12 556	14.966	39,636	248,427	123.114	371.541	7,246
20. Lanark . . .	5,666	1,944	7.610	34 483	10.785	19,582	64,850	131,040	79,282	210,322	7.637
21. Linlithgow . . .	1,568	512	2.080	3,801	8,183	3.340	10.324	11.671	4,329	16,000	2,428
22. Nairn	1,013	279	1,292	1 801	870	3,321	5.992	13,020	4.422	17,442	981
23. Orkney . . .	4,949	1.167	6.116	9,386	3.755	12,742	25,883	16,484	13,943	30,427	4,862
24 Shetland . . .	932	4,338	5,270	8.712	5,852	5,531	20,095	50,712	28,591	79,303	3,749
25. Peebles . . .	892	239	1,131	1,918	1.167	2,558	5,643	112.393	77 360	189,753	892
26. Perth	10,856	3,167	14,023	18,766	21,793	34,396	74,955	476,667	208.253	684,920	9.465
27. Renfrew . . .	2,307	984	3,291	14,952	3.581	5,992	24,525	19 797	11,032	30,829	1,816
28. Ross and Cromarty .	5,949	1,509	7.458	18,027	8,969	16,486	43,482	246 461	105,687	352,148	6.563
29. Roxburgh . . .	3,714	768	4,482	4.559	4,816	6.310	15,685	271,439	202,524	473,963	3,996
30. Selkirk . . .	495	98	593	967	567	959	2,493	95,971	70,802	166,773	426
31. Stirling . . .	8,301	1,561	4,862	10,081	9.106	9 804	28,991	71.667	39.991	111,658	2 162
32. Sutherland . . .	2,199	558	2,757	5,510	2.721	4.166	12,400	161.024	52.203	213,227	1.182
33. Wigtown . . .	4.096	1,499	5,595	19,304	6,602	14,162	40,068	77,332	47.814	125.146	10,386
Total, . .	113.441	47,154	190,595	389,667	252 614	438,935	1,081,246	4,515,787	2,338,073	6,853,860	154,083

TABLE No. 3.—QUANTITIES AND VALUES OF THE IMPORTS OF LIVE CATTLE, SHEEP, AND SWINE, 1877 TO 1881.

	QUANTITIES.					VALUES.				
	1877.	1878.	1879.	1880.	1881.	1877.	1878.	1879.	1880.	1881.
	No.	No.	No.	No.	No.	£	£	£	£	£
Live Cattle, ...	201,193	253,462	247,768	389,724	319,374	3 817,499	5,080,702	4.639,431	7,793.960	6.251,557
Live Sheep, ...	874,055	892,125	944,888	941,121	935,144	2,107,466	2.171.904	2,252.824	2,266,436	2.191,762
Live Swine, including Sucking Pigs,	20,037	55,911	52,366	51,191	24,283	87,599	200,703	183,131	178.899	81,917
Total, . .	1,095,285	1,201,498	1,245,022	1,382,036	1,278,801	6,012,564	7,453,309	7.075,386	10.239.295	8,525,256

TABLE No. 4.—QUANTITIES AND VALUES OF THE IMPORTS OF BEEF AND PORK (SALTED), BACON AND HAMS, &c., 1877 TO 1881.

	QUANTITIES.					VALUES.				
	1877.	1878.	1879.	1880.	1881.	1877.	1878.	1879.	1880.	1881.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	£	£	£	£	£
Meat—										
Beef, salted, ...	209,618	220.816	242,977	290,564	251,304	410,251	420.077	418.854	535,213	487.650
Beef, fresh or slightly salted, .	468,887	508.307	569,260	727,392	817,295	1,276,141	1,346,285	1,518.574	1,889.730	2,175,876
Unenumerated, salted or fresh,	130,178	145,981	153,284	149,010	178,256	388,933	428,064	440.726	429,073	516.551
,, preserved other than salted,	469,003	439,900	567,877	655,800	575,482	1,434,234	1,315,701	1,690,099	1,905.717	1,637,545
Pork, salted and fresh, . .	303,734	389,439	441,209	409,267	381,526	608.249	659,462	691.362	684,192	681,551
Bacon and Hams, ...	2,820,482	4.295,151	4,917,631	5,334,648	4,627,484	6,889.354	8,669,310	8.880,223	10.985.642	10,729,945
Total, . .	4,401,902	5,999,594	6,892,238	7,566,681	6,831,347	11,007.162	12,838,899	13.639.838	16.429,567	16.229.118
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	£	£	£	£	£
Fish, ...	1,071.802	995,933	1,160,140	1,343,434	1,530,219	1.640,259	1,541,830	1.652.957	1,666,710	2.332.605
Poultry and Game (see Value), .	. .	. .	. .	. .	. .	319.994	403,024	432,289	421,645	457.553
Butter, ...	1.637,403	1,796.517	1,789,721	2.326.305	2,047,341	9,543,332	9,954,053	10.379.451	12,141.034	10.866,151
Cheese, ...	1 653,920	1.968.859	2,045,399	1,775,997	1,840,090	4.771.393	4,946,686	3.824,017	5.091,514	5.245,115
Lard, ...	592,264	908.605	840,819	927,512	854,322	1.471.829	1,787,874	1,420,881	1,852,160	2.197,166
Eggs, ... Number,	751,185.600	783,714.720	766,707,840	747,408,600	756,719,160	2,473,377	2,511,096	2,295,720	2,235,451	2.322,390
Total, . .	. .	. .	. .	. .	. .	20,220,184	21,144,563	20,005,315	23,408,514	23,420,980

TABLE No. 5.—QUANTITIE AND VALUES OF THE IMPORTS OF WHEAT AND WHEAT FLOUR, 1877 TO 1881.

	QUANTITIES.					VALUES.				
	1877.	1878.	1879.	1880.	1881.	1877.	1878.	1879.	1880.	1881.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	£	£	£	£	£
Wheat,	54,269,800	49,906,484	59,591,795	55,261,924	57,147,933	33,885,437	27,433,444	31,468,171	30,621,711	31,531,535
Wheat Flour,	7,377,303	7,828,079	10,728,252	10,558,312	11,357,381	6,808,982	6,784,197	8,501,949	8,706,109	9,205,219
Total,	61,647,103	57,734,563	70,320,047	65,820,236	68,505,314	40,694,419	34,217,641	39,970,120	39,327,820	40,736,754

TABLE No. 6.—QUANTITIES AND VALUES OF THE IMPORTS OF BARLEY, OATS, RYE, MEAL, AND MALT, 1877 TO 1881.

	QUANTITIES.					VALUES.				
	1877.	1878.	1879.	1880.	1881.	1877.	1878.	1879.	1880.	1881.
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	£	£	£	£	£
Barley,	12,959,526	14,156,919	11,546,314	11,705,290	9,805,944	5,396,019	5,542,503	4,804,469	5,011,159	4,067,706
Oats,	12,910,035	12,774,420	13,471,660	13,826,732	10,324,119	4,992,879	4,557,665	4,496,927	4,934,468	3,776,862
Indian Corn,	30,477,818	41,673,906	36,148,379	37,224,733	33,480,846	9,854,512	12,595,402	9,818,601	11,163,080	10,408,302
Peas and Beans,	6,110,985	3,696,300	4,248,667	4,723,384	4,065,720	2,331,139	1,468,146	1,642,277	1,923,498	1,626,168
Rye,	241,269	342,395	267,253	126,112	169,213	96,232	125,291	91,358	51,768	79,014
Buckwheat,	61,424	45,813	42,753	31,757	45,032	23,006	16,067	14,823	12,858	16,250
Total,	62,761,057	72,689,753	65,725,026	67,638,008	57,890,874	22,693,787	24,305,074	20,868,455	23,094,831	19,974,302
	Cwts.	Cwts.	Cwts.	Cwts	Cwts.	£	£	£	£	£
Barley Meal,	511	485	2,417	1,611	426	231	166	811	844	290
Oatmeal,	153,418	762,088	645,928	625,415	177,897	108,880	485,888	391,002	378,370	104,256
Indian Meal,	2,713	41,747	37,080	55,374	25,137	17,264	32,276	25,585	36,842	24,007
Rye Meal,	47,463	56,322	8,345	9,250	7,732	17,624	20,986	3,122	4,326	5,476
Pea Meal and Bean Meal,	16	995	696	118	830	12	442	251	61	396
Buckwheat Meal,	16	16	92	68	9	22	18	92	69	9
Meal unenumerated,	8,896	5,711	4,112	22,450	27,334	4,083	2,384	1,999	12,106	11,278
Total,	213,033	867,364	698,670	714,286	239,365	148,116	542,160	422,862	432,618	145,712

TABLE No. 7.—Average Prices of Various kinds of Animals, Dead Meat, and Provisions, 1877 to 1881.

Kinds of Animals, Dead Meat, &c.		1877.	1878.	1879.	1880.	1881.
Animals—Oxen and Bulls from all countries,	each	£18 19 6	£22 12 2	£21 17 6	£22 0 11	£21 15 2
,, Sheep, including lambs, from all countries,	,,	2 8 3	2 8 8	2 7 8	2 8 2	2 6 11
Bacon—From all countries,	per cwt.	2 7 10	1 18 7	1 14 4	2 0 0	2 5 10
Hams—From all countries,	,,	2 13 11	2 8 1	2 3 9	2 6 6	2 9 0
Beef, salted—From all countries,	,,	1 19 2	1 18 1	1 14 6	1 16 10	1 18 10
,, Admiralty prices {American,	,,	2 8 4	—	—	2 0 2¾	2 7 10½
,, Admiralty prices {Deptford,	,,	3 10 4¾	—	—	3 0 1¼	—
Pork, salted—From all countries,	,,	1 19 7	1 13 1	1 19 11	1 12 7	1 14 9
,, Admiralty prices,	,,	3 3 3¼	2 15 5½	—	2 19 3¾	3 0 1
Butter—From all countries,	,,	5 16 7	5 10 10	5 1 6	5 4 5	5 6 2
Cheese—From all countries,	,,	2 17 8	2 10 3	2 2 9	2 17 4	2 17 0
Potatoes—From all countries,	,,	0 5 11	0 5 5	0 5 9	0 5 10	0 5 5
Eggs—From all countries,	per 120	0 7 11	0 7 8	0 7 2	0 7 2	0 7 4
Lard—From all countries,	per cwt.	2 9 8	1 19 4	1 13 10	1 19 11	2 11 5
Milk—Bethlehem Hospital prices,	per gallon	0 1 3	0 1 3	0 1 3	—	—

TABLE No. 8.—Return of the Average Prices of Wool in each of the Years from 1862 to 1881.

Years.	Australian.	South African.	English Fleeces.	Years.	Australian.	South African.	English Fleeces.
	Per lb. s. d.	Per lb. s. d.	Per lb. s. d. s. d.		Per lb. s. d.	Per lb. s. d.	Per lb. s. d.
1862	1 7¼	1 2½	—	1872	1 3	1 4¼	—
1863	1 6¾	1 2¾	—	1873	1 3¼	1 4¼	1 11
1864	1 9⅜	1 5¼	—	1874	1 2¾	1 4¾	—
1865	1 7⅜	1 3 1/16	2 0 to 2 1	1875	1 4¼	1 4¼	1 6¼
1866	1 8 13/16	1 5⅞	1 9 ,, 1 10	1876	1 3¼	1 3¾	1 5½
1867	1 7½	1 2¾	1 7	1877	1 3	1 3¾	1 4½
1868	1 3 15/16	1 2 9/16	—	1878	1 2½	1 3¼	1 3½
1869	1 2 15/16	1 2¾	1 3½	1879	1 2⅓	1 2⅓	1 0¼
1870	1 3½	1 3¼	—	1880	1 2¾	1 3¼	1 2½
1871	1 2¼	1 1	1 1	1881	1 2⅓	1 3	1 3½

TABLE No. 9.—AVERAGE PRICES (PER IMPERIAL QUARTER) OF HOME-GROWN WHEAT, BARLEY, AND OATS IN THE WEEKLY MARKET OF EDINBURGH FOR THE YEARS 1878, 1879, 1880, 1881, AND 1882.

Weekly Market day Wednesday.		WHEAT.					BARLEY.					OATS.				
		1878.	1879.	1880.	1881.	1882.	1878.	1879.	1880.	1881.	1882.	1878.	1879.	1880.	1881.	1882.
		s. d.	s. d.	s. d	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
January	1	55 1	39 2	43 1	44 10	33 0	33 3	33 10	33 3	33 0	25 7	27 7	21 6	26 7	23 0	21 8
	2	55 8	38 0	46 11	42 8	39 8	33 11	33 3	33 6	34 4	26 8	28 4	21 8	26 5	23 0	22 4
	3	49 0	40 4	39 2	46 3	33 0	34 11	32 9	32 5	33 6	25 5	28 3	22 0	26 6	23 6	22 3
	4	44 10	38 3	38 6	44 4	35 1	33 8	34 2	31 6	34 0	24 11	28 7	22 1	26 10	23 4	22 6
	5	45 3	.	.	.	.	32 7	.	.	.	.	28 7	.	.	.	.
February	1	42 5	38 0	37 1	43 5	30 8	31 5	34 3	31 8	34 8	24 6	28 3	21 10	26 2	23 2	22 6
	2	43 4	37 6	36 1	41 9	37 6	32 4	34 3	33 10	33 4	23 6	28 10	21 8	25 11	23 4	22 6
	3	39 6	38 6	38 3	43 0	34 0	31 10	34 10	33 1	32 6	24 9	28 3	22 1	27 9	23 1	22 8
	4	42 7	38 6	41 7	39 3	37 7	32 3	35 8	30 6	33 4	23 0	29 4	22 1	27 8	24 0	22 10
March	1	41 10	38 4	38 9	41 2	40 3	32 6	35 10	30 0	34 3	22 1	30 11	23 1	28 6	23 6	23 0
	2	43 3	39 9	35 9	40 0	33 5	32 1	38 4	30 3	33 11	23 9	31 0	22 8	27 7	24 0	23 5
	3	43 5	40 0	41 1	47 1	37 2	34 5	37 5	29 11	36 1	23 3	31 8	22 11	29 1	24 1	24 4
	4	44 0	42 0	44 10	43 9	35 8	33 1	37 7	32 5	36 2	23 3	30 11	23 7	28 10	23 8	24 11
	5	.	.	51 11	42 8	37 9	.	.	31 6	36 4	24 5	.	.	29 0	23 10	24 0
April	1	46 5	42 5	42 4	41 11	38 3	33 2	38 4	33 2	36 3	25 0	31 11	24 4	30 1	24 8	23 3
	2	46 3	42 0	44 11	48 3	37 9	31 8	36 8	31 11	35 0	23 8	32 9	23 5	28 10	24 10	25 1
	3	46 4	41 10	39 6	44 11	39 6	34 10	37 4	28 9	35 0	26 10	32 5	23 2	29 4	24 2	25 6
	4	46 6	42 2	42 6	46 0	37 6	32 9	38 5	30 8	33 7	24 5	32 0	23 8	29 6	25 0	26 0
	5	.	41 6	.	.	.	.	37 0	.	.	.	.	24 6	.	.	.
May	1	46 1	42 1	42 3	44 5	35 11	31 10	36 6	29 5	33 5	23 11	31 5	24 2	28 6	25 7	25 8
	2	43 9	42 11	44 0	49 1	38 7	30 5	34 4	31 8	34 5	24 6	31 7	24 8	29 6	25 2	25 8
	3	43 4	41 9	40 11	45 0	39 0	31 6	34 7	26 11	34 8	22 10	31 6	23 8	29 3	24 9	25 7
	4	41 11	42 10	43 0	44 2	39 1	30 9	36 0	29 5	32 0	23 5	31 5	24 2	29 7	24 9	26 6
	5	41 11	.	.	.	37 6	28 5	.	.	.	24 1	31 10	.	.	.	26 6
June	1	37 4	41 6	44 1	46 0	37 7	29 9	33 4	26 7	34 6	25 6	32 3	24 3	29 4	24 2	26 11
	2	42 6	41 11	43 6	47 7	39 1	29 5	37 3	27 11	34 0	.	30 11	24 2	29 7	24 7	26 11
	3	36 7	41 5	41 8	47 6	38 5	30 2	37 0	27 1	35 2	26 3	31 7	24 7	29 8	25 6	27 5
	4	39 2	41 2	39 4	48 1	38 0	29 3	36 10	28 8	33 9	24 0	30 11	25 2	29 4	25 2	26 10
	5	.	.	38 6	47 11	.	.	.	26 11	.	.	.	.	30 5	24 7	.
July	1	36 0	43 5	38 6	44 7	39 10	29 0	35 8	25 2	29 9	24 9	31 2	24 10	29 6	24 11	26 1
	2	35 11	43 9	43 7	46 8	43 1	25 6	36 9	24 6	33 2	26 6	31 2	25 8	28 11	24 2	27 1
	3	38 8	44 8	43 4	47 4	43 9	26 11	35 2	23 10	33 4	25 10	31 7	25 11	31 2	23 5	26 10
	4	37 11	47 5	42 0	48 3	43 10	27 6	34 4	27 10	.	.	31 2	26 6	29 8	24 2	27 9
	5	.	48 5	.	.	.	.	.	.	.	.	.	27 8	.	.	.
August	1	38 4	48 0	39 4	49 0	43 0	27 9	38 2	26 8	27 0	.	30 6	28 2	29 11	24 7	28 5
	2	39 4	46 11	33 10	49 2	39 10	26 7	31 8	26 2	30 0	26 3	30 8	28 4	30 0	24 9	28 0
	3	38 10	45 10	40 8	50 3	33 0	26 8	.	24 6	31 3	25 0	30 5	29 1	29 5	25 1	27 6
	4	37 9	46 8	40 5	56 5	33 6	25 1	35 0	27 5	34 4	28 6	30 3	29 6	27 6	26 7	28 4
	5	38 11	.	.	52 10	37 0	32 6	.	.	.	28 6	30 5	.	.	26 8	27 8
September	1	38 4	44 11	36 0	58 6	32 2	31 8	40 3	24 6	34 0	29 11	31 4	29 6	23 7	26 7	28 0
	2	38 11	45 11	31 2	54 8	37 6	35 7	.	32 0	34 0	36 2	29 11	29 10	24 0	26 0	25 11
	3	37 10	46 9	32 3	57 6	37 4	35 11	.	33 7	30 8	35 0	27 1	29 4	24 5	25 11	25 5
	4	38 4	50 8	38 5	57 3	34 10	35 7	36 4	32 4	34 2	32 5	25 4	28 1	24 4	26 7	23 11
	5	.	.	36 6	.	.	.	.	33 4	.	.	.	.	23 8	.	.
October	1	44 4	52 9	39 8	58 6	38 6	34 7	34 1	34 2	33 6	30 8	25 2	25 8	23 8	25 1	23 6
	2	36 6	54 0	43 5	57 3	35 4	35 4	37 2	36 1	27 8	29 10	24 9	28 4	24 2	25 2	22 9
	3	36 5	55 9	42 4	47 3	40 3	33 5	34 10	35 2	26 8	27 5	26 5	26 8	23 11	25 0	22 6
	4	39 7	59 0	40 7	45 4	35 10	36 4	35 10	35 0	27 9	28 5	24 11	26 10	23 6	23 7	23 0
	5	38 6	56 7	.	.	.	35 0	32 5	.	.	.	25 10	26 4	.	.	.
November	1	40 2	53 6	42 0	37 5	38 5	33 8	31 3	33 7	25 10	29 0	25 3	24 9	23 4	22 7	22 11
	2	40 6	43 11	46 0	50 9	37 10	34 9	30 6	32 1	26 0	30 10	24 9	25 2	23 2	22 2	23 3
	3	39 1	53 7	44 2	44 0	35 10	34 9	30 3	33 1	24 7	30 9	23 6	25 0	24 7	21 0	24 0
	4	39 6	47 6	46 9	46 2	39 2	34 8	29 7	34 7	24 0	29 5	22 6	23 5	24 9	21 1	23 10
	5	.	.	.	39 5	.	.	.	.	25 2	.	.	.	.	21 4	.
December	1	40 2	42 0	43 0	35 9	37 3	36 7	30 8	34 4	24 6	29 6	21 9	24 5	24 6	21 8	24 7
	2	41 8	45 6	46 4	42 10	36 7	34 4	34 1	33 8	24 9	30 7	22 8	23 11	23 9	22 3	24 2
	3	40 2	49 10	37 4	37 7	36 3	33 11	33 3	32 6	25 2	31 5	21 7	24 1	23 6	21 1	23 10
	4	40 0	47 5	42 10	31 11	36 0	33 3	33 8	32 7	24 5	30 1	21 5	25 8	23 5	22 5	23 6
	5	40 2	49 8	46 0	.	.	33 8	32 2	33 7	.	.	21 7	26 9	23 3	.	.

APPENDIX (A).

PROCEEDINGS AT BOARD MEETINGS.

MEETING OF DIRECTORS, 1st FEBRUARY 1882.

Present.—The Earl of Stair, K.T., vice-president; the Hon. G. R. Vernon, Auchans House; Sir M. R. Shaw Stewart, Bart.; Admiral Sir William Edmonstone, Bart.; Sir Henry J. Seton Steuart, Bart.; Sir James Ramsay Gibson Maitland, Bart.; Mr. Ainslie of Costerton; Mr. Allan, Munnoch; Mr. Balfour of Balbirnie; Captain Boyle of Shewalton; Mr. Dingwall, Ramornie; Mr. Dudgeon, Easter Dalmeny; Mr. Scott Dudgeon, Longnewton; Mr. T. Gordon Duff, Park House; Mr. Elliot, Blackhaugh; Rev. John Gillespie, Mouswald Manse; Colonel Gillon of Walhouse; Mr. Maxtone Grahame of Cultoquhey; Lieutenant-Colonel Hare of Calder Hall; Mr. Hope Duddingston; Mr. Irvine of Drum; Mr. Eliott Lockhart of Borthwickbrae; Mr. Mackenzie of Portmore; Mr. Mylne, Niddrie Mains; Mr. Nicoll, Littleton; Mr. J. Turnbull Smith, C.A.; Mr. Villiers, Closeburn Hall; Mr. Walker, Portlethen—The Earl of Stair in the chair.

Mr. F. N. Menzies reported apologies for the absence of—Sir W. C. Anstruther, Bart.; Mr. Dalrymple of Newhailes, M.P.; Mr. Johnstone Douglas of Lockerbie; Mr. Mollison, Dochgarroch Lodge; Mr. Murray of Dollerie; Mr. Pott of Dod; Mr. Ralston, Glamis House; Mr. Walker of Bowland, C.B.; and Professor Wilson.

The Late Sir Robert Christison, Bart.—Before proceeding to the business it was resolved to record in the minutes the loss sustained by the Society by the death of Sir Robert Christison, Bart., who for a time acted as a member of the Society's Chemical Committee, on various occasions afforded the Directors valuable and important assistance and advice, and whose last literary work was written on his death-bed for the Transactions of the Highland Society.

Directorate.—It was remitted to the Committee some time since appointed to consider the business arrangements of the Society and the present system of selecting Directors, with the addition of Mr. Martin, yr. of Auchendennan; Mr. Walker, Portlethen; and Mr. Mollison, Dochgarroch Lodge, to frame a set of rules for the consideration of the Directors calculated to carry out the bye-laws approved at last general meeting, and which have to be submitted to the next general meeting for confirmation.

International Fisheries Exhibition.—On the motion of Mr. Maxtone Grahame of Cultoquhey, seconded by Mr. Irvine of Drum, it was resolved to offer in connection with the International Fisheries Exhibition, to be held at Edinburgh in April next, a premium of £15 for a report on the species of foreign fish most suitable for introduction into British rivers and waters, and a premium of £10 for the utilisation of fish offal.

Rot or Fluke and Louping-ill in Sheep.—A pamphlet on rot or fluke and louping-ill in sheep, with the use of salt as a preventative, was submitted, and the Board agreed to purchase 100 copies for circulation.

Injurious Insects.—A letter was submitted from Miss Ormerod, Duster Lodge, Spring Grove, Isleworth, presenting copy of a pamphlet on injurious insects, being the substance of a lecture delivered by her at the Royal Agricultural College, Cirencester.

The Secretary stated that he had, in name of the Directors, thanked Miss Ormerod for her pamphlet.

MEETING OF DIRECTORS 1st MARCH 1882.

Present.—The Earl of Stair, K.T.; Lord Polwarth; Lord Balfour of Burleigh; Sir James Gibson-Craig, Bart.; Mr. Ainslie of Costerton; Professor Balfour; Mr. Scott Dudgeon, Longnewton; Mr. Elliot, Blackhaugh; Mr. Forman, Duncrahill; Rev. John Gillespie, Mouswald Manse; Colonel Gillon of Wallhouse; Colonel Hare of Calder Hall; Mr. Hope, Duddingston; Mr. Eliott Lockhart of Borthwickbrae; Mr. Mollison, Dochgarroch Lodge; Mr. Pott of Dod; Mr. John Turnbull Smith, C.A.; Professor Wilson, and Dr. Aitken—The Earl of Stair in the chair.

Mr. F. N. MENZIES reported apologies for the absence of Sir Alexander Muir Mackenzie, Bart.; Sir Henry Seton Steuart, Bart.; Captain Boyle of Shewalton, R.N.; Mr. Dalrymple of Newhailes, M.P.; Mr. Johnstone Douglas of Lockerbie; Mr. T. Gordon Duff, Park House; Colonel Hozier, Mauldslie Castle; Mr. Mackenzie of Portmore; Mr. Nicoll, Littleton; Mr. Walker of Bowland, C.B.; Mr. Walker, Portlethen; and Mr. Villiers, Closeburn Hall.

THE LATE SIR ROBERT CHRISTISON, BART.—A letter was read from Dr. Christison, acknowledging receipt of the excerpt from the minutes of the Directors of 1st February, recording their sense of the loss which they had sustained by the death of Sir Robert Christison; and on the part of his family thanking the Society most gratefully for the kind acknowledgment of his services and merits which they had been pleased to express.

AGRICULTURAL AND FORESTRY EXAMINATIONS.—It was intimated that the examinations for the Society's agricultural certificates and diploma, and for the certificates in forestry, had been fixed for the 17th, 18th, and 19th April, candidates being required to lodge intimation on or before the 3rd of April.

GLASGOW SHOW.—Stallion for Glasgow District.—The Secretary stated that the Society's premium of £100 for a stallion to serve this season in the district connected with the Glasgow show had been competed for on the 21st February, and that the judges had selected St Lawrence, a brown stallion, aged 4 years, belonging to Mr. David Riddell, Blackhall, Paisley, members of the Society in the district to have a preference to the service of the horse.

CONTRACT FOR ERECTING SHOWYARD.—A tender by Mr. Richardson, Annan, for erecting the showyard, was submitted and accepted by the Board, the contract to be for five years, as on the two former occasions.

MEETING OF DIRECTORS, 5TH APRIL 1882.

Present.—Lord Arthur Cecil, the Hon. G. R. Vernon, Sir W. C. Anstruther, Bart.; Admiral Sir Wm. Edmonstone, Bart.; Sir Henry Seton Steuart, Bart.; Sir James Gibson-Graig, Bart.; Mr. Ainslie of Costerton; Mr. Allan, Munnoch; Professor Balfour; Mr. Balfour of Balbirnie; Mr. Graham Binny, W.S.; Mr. Cunningham, Tarbreoch; Mr. Dingwall, Ramornie; Mr. Scott Dudgeon, Longnewton; Mr. Dudgeon, Easter Dalmeny; Mr. Elliot, Blackhaugh; Mr. Forman, Duncrahill; Colonel Hare of Calder Hall; Mr. Hope, Duddingston; Mr. Eliott Lockhart of Borthwickbrae; Mr. Mackenzie of Portmore; Mr. Mylne, Niddrie Mains; Mr. Pott of Dod; Mr. Ralston, Glamis House; Mr. John Turnbull Smith, C.A.; and Mr. Walker, Portlethen—Mr. Dingwall, Ramornie, in the chair.

Mr. F. N. MENZIES reported apologies for the absence of the Earl of Glasgow; Sir M. R. Shaw Stewart, Bart.; Sir Alexander Muir Mackenzie, Bart.; Captain Boyle of Shewalton; Mr. T. Gordon Duff, Park House; Rev. John Gillespie, Mouswald Manse; Colonel Gillon of Wallhouse; Colonel Hozier of Newlands; Mr. Mollison, Dochgarroch Lodge; Mr. Nicoll, Littleton; Mr. Scott, Glendronach; Mr. Villiers, Closeburn Hall; Mr. Walker of Bowland, C.B.; and Professor Wilson.

ADDRESS TO THE QUEEN.—The following address to the Queen was unanimously adopted, and directed to be sent to his Grace the Duke of Richmond and Gordon, K.G., the President, for presentation:—

"Unto the Queen's Most Excellent Majesty.

"We your Majesty's most dutiful and loyal subjects, the Highland and Agricultural Society of Scotland, beg leave humbly to lay before your Majesty the expression of our most sincere and heartfelt congratulations on your providential escape from the late daring attempt on your Majesty's most sacred person.

"As a lady and as our Queen we equally respect you, and with the whole body of your Majesty's most loyal subjects we join in expressing our abhorrence of the dastardly attempt on your most precious life.

"We feel highly honoured that your Majesty has most graciously condescended to allow your name to be enrolled as a member of this Society, and that your Majesty encourages our efforts to improve stock and benefit agriculture by exhibiting at our Shows.

"We are sincerely glad to understand that your Majesty has not suffered in health

from the shock the atrocious crime must have caused you; and our earnest prayer is that your Majesty may be long spared to adorn the throne of this great nation.—Sealed with the corporate seal of the Society, &c."

THE LATE SIR WYVILLE THOMSON.—It was resolved to record in the minutes an expression of the Directors' deep regret at the death of Sir Charles Wyville Thomson, and of their sense of the valuable assistance which the Society had received from him, both as a member of the council on agricultural education and an examiner in natural history.

AGRICULTURAL EDUCATION.—The Secretary stated that, in accordance with the instructions of the Special Committee on scientific education, he had communicated with Sir Francis R. Sandford on the subject of having the teaching of agriculture included in the subjects taught in the board schools in Scotland; and he read the letter received in reply. (See page 12).

CONTAGIOUS DISEASES (ANIMALS) ACT.—In consequence of foot-and-mouth disease having broken out in Berwickshire, and the Privy Council having only declared the infected place and adjoining farms an infected area, the Board resolved to earnestly request the Privy Council to declare the entire county of Berwick an infected area at once, and to prohibit all public sales of cattle within its limits.

It was also resolved to request the Privy Council to insert a provision in the next Order of Council that no licence be valid for the movement of cattle from England or Wales into any burgh mart in Scotland for sale without a licence from the County Local Authority.

GLASGOW SHOW, 1882.—Letters to the conveners of counties connected with the show—Lanark, Ayr, Argyll, Renfrew, and Bute—and to the Lord Provost of Glasgow, in regard to the nomination of the Local Committee, were submitted and approved of.

INVERNESS SHOW, 1883.—The Board approved of letters being addressed to the conveners of the counties embraced in the district of the Show—Inverness, Elgin, Nairn, Ross, Cromarty, Caithness, Sutherland, and Orkney—in reference to the auxiliary subscription.

PRIZES FOR POLLED CATTLE.—An application by the Polled Cattle Society, to place polled Aberdeen and Angus cattle on the same footing as regards prizes as shorthorns, was submitted, and referred to the favourable consideration of the Committee on General Shows when fixing the amount of premiums for the Inverness Show.

PRESENTATION OF BOOKS.—The Secretary submitted part 2 of volume 3 of the Galloway Herd-Book, containing pedigrees of pure-bred Galloway cattle, presented to the Society's library by the Galloway Cattle Society; and reports on injurious insects and on turnip-fly, presented by Miss Eleanor A. Ormerod.

The Secretary was instructed to thank the donors.

MEETING OF DIRECTORS, 3RD MAY 1882.

Present.—Lord Arthur Cecil; Sir W. C. Anstruther, Bart.; Sir James Gibson-Craig, Bart.; Mr. Ainslie of Costerton; Mr. Balfour of Balbirnie; Professor Balfour; Mr. Dingwall, Ramornie; Mr. Johnstone Douglas of Lockerbie; Mr. Scott Dudgeon, Longnewton; Mr. Dudgeon, Easter Dalmeny; Mr. T. Gordon Duff, Park House; Mr. Elliot, Blackhaugh; Mr. Forman, Duncrahill; Rev. John Gillespie, Mouswald Manse; Colonel Hare of Calder Hall; Mr. Hope, Duddingston; Mr. Mackenzie of Portmore; Mr. Mylne, Niddrie Mains; Mr. Nicoll, Littleton; Mr. Pott of Dod; Mr. Ross, Bachilton; Mr. Scott, Glendronach; Mr. John Turnbull Smith, C.A.; Mr. Campbell Swinton of Kimmerghame; Colonel Williamson of Lawers; Professor Wilson, and Dr. Aitken—Mr. Dingwall, Ramornie in the chair.

Mr. F. N. MENZIES reported apologies for the absence of Lord Balfour of Burleigh; Sir Alexander Muir Mackenzie, Bart.; Sir Henry J. Seton Steuart, Bart.; Captain David Boyle of Shewalton, R.N.; Mr. Dalrymple of Newhailes, M.P.; Colonel Gillon of Wallhouse; Mr. Irvine of Drum; Mr. Eliott Lockhart of Borthwickbrae; Mr. Ralston, Glamis House; Mr. Walker, Portlethen; and Mr. Villiers, Closeburn Hall.

ADDRESS TO THE QUEEN.—The following letter from Sir William Harcourt to the Duke of Richmond and Gordon, acknowledging receipt of the Society's address to the Queen, was read:—

"Whitehall, 26th April 1882.

"My Lord Duke,—I have had the honour to lay before the Queen the loyal and dutiful address of the Highland and Agricultural Society of Scotland on the subject of the recent attempt upon the life of her Majesty, and I have it in command to assure your Grace that her Majesty is deeply sensible of the loyalty and affection of her faithful subjects.—I have the honour to be, my Lord Duke, your Grace's obedient servant,

"W. V. HARCOURT.

"His Grace the Duke of Richmond and Gordon, K.G."

Agricultural and Forestry Examinations.—The reports of the agricultural and forestry examinations were submitted, from which it appeared that the written examinations were held on the 17th and 18th, and the oral examinations on the 19th April, and resulted in seven candidates passing for the agricultural diploma, three for first class certificates in agriculture, and two for first class certficates in forestry.

It was announced that Professor Wilson had awarded, after special examination, the £10 prizes given in books to the agricultural class in the Edinburgh University to—1, £5, Henry Prain, Mains of Castle Huntly, Longforgan; and 2, £2, 10s. each, W. J. Thomson, Glasgow, and Robert P. Wright, Downan, Ballantrae—equal.

General Meeting.—The half-yearly general meeting of the Society, for the election of members and for other business, was fixed to be held on the 21st of June, being the first Wednesday after the closing of the entries for the Glasgow Show, and the usual day for holding the meeting.

Presentation of Clydesdale Stud Book.—The Secretary submitted volume fourth of the Clydesdale Stud Book, presented to the Society's library by the Council of the Clydesdale Horse Society.

MEETING OF DIRECTORS, 7th JUNE 1882.

Present.—Sir James H. Gibson-Craig, Bart.; Professor Balfour; Mr. Cunningham, Tarbreoch; Mr. Dingwall, Ramornie; Mr. Scott Dudgeon, Longnewton; Mr. Dudgeon, Easter Dalmeny; Mr. Dundas of Arniston; Rev. J. Gillespie, Mouswald Manse; Colonel Gillon of Wallhouse; Colonel Hare of Calder Hall; Mr. Hope, East Barns; Mr. Irvine of Drum; Mr. Eliott Lockhart of Borthwickbrae; Mr. Mollison, Dochgarroch Lodge; Mr. Mylne, Niddrie Mains; Mr. Nicoll, Littleton; Mr. Pott of Dod; Mr. Ross, Bachilton; Mr. Campbell Swinton of Kimmerghame; Mr. Villiers, Closeburn Hall; Mr. Walker of Bowland, C.B.; Mr. Walker, Portlethen—Mr. Cunningham, Tarbreoch, in the chair.

Mr. F. N. **Menzies** reported apologies for the absence of—Admiral Sir Wm. Edmonstone, Bart.; Sir James R. Gibson Maitland, Bart.; Mr. Allan, Munnoch; Mr. Balfour of Balbirnie; Captain Boyle of Shewalton, R.N.; Mr. Dalrymple of Newhailes, M.P.; Mr. Johnstone Douglas of Lockerbie; Mr. Thomas Gordon Duff of Park; Mr. Harris, Earnhill; Mr. Mackenzie of Portmore; Mr. Ralston, Glamis; Mr. Scott, Glendronach; Mr. John Turnbull Smith, C.A.

Glasgow Show, 1882.—The Secretary stated that he was to attend at the George Hotel (late the Queen's), Glasgow, on Wednesday the 14th curt., to receive entries and to close the list.

The Board resolved that, should the cattle restrictions prevent intending exhibitors from sending cattle, sheep, or pigs to the Show, the entry-money should be returned.

Professor Blount's Experiments with Cereals.—A communciation, addressed to Professor Wilson, was submitted from Professor Blount of the State Agricultural College, Fort Collins, Colorado, acknowledging receipt of the two last volumns of the Society's Transactions, and sending twelve samples of his wheat, the product of 1881, all raised by himself and improved. In all now growing he has 181 different varieties, the seed of which he has received from every and all nations in the world. In reading the reports in the Society's Transactions from the different districts of Scotland, Professor Blount was astonished to learn that the Scotch farmers sow so much seed—3 bushels per acre. If evenly and regularly distributed, such thick sowing places about 4 kernels of wheat upon every square inch of land, whereas Professor Blount found it took at least 16 square inches for a kernel to carry out its habits of growth according to the unchangeable laws of nature. When room enough is given wheat, every perfect grain will always produce in good soil from 10 to 150 tillers. He has raised 181 good heads from one kernel without any subdivision whatever, and those heads made 7602 kernels—an average of 42 to the head. Now which is better—giving wheat room to carry out its habits of growth, thereby letting in the sun to obviate rust and mildew, short immature heads, poor grain and stalks; or sowing thick, so that no kernel can produce more than one stalk—a poor one at that—feeble, immature, and weak. Professor Blount had been experimenting twelve years, and finds that 30 pounds of seed will produce more and better results than a larger quantity, when sown at the right time. One grain of wheat in a check 4 inches square will produce more and better grain than 4 grains in one square inch. The greatest enemy to wheat is wheat. For experimental purposes Professor Blount sows 10 lbs. to 20 lbs. only per acre, and has never failed in twelve years with that amount of seed to make from 40 bushels to 90 bushels per acre. 7½ lbs. once (1876) planted and cultivated on an exact acre gave 67 bushels and 17 lbs. Last season 28 oz., on exactly 42 square rods, gave 18 bushels 6 lbs. The wheat was sown in drills two feet apart, and cultivated twice. Next year Professor Blount hopes to be able, at the request of several Scotchmen, to send the Society not only samples of grain, but straw-heads, &c., of all his wheats. In concluding, the Professor states he would be glad to receive from members of the Society samples of Scotch smooth-headed wheats, rye, barley, and oats, as he would like to improve them, and he would in return send samples of the results. An ounce of each is sufficient.

Address by Mr. Buckmaster.—The Secretary stated that it had been arranged that Mr. Buckmaster, of the Science and Art Department of the Committee of Council on Education, would deliver an address in the Government classes for teaching the scientific principles of agriculture in the Society's Hall, 3 George IV. Bridge, on Wednesday the 14th current, at 3 P.M., and that admission was free. Mr. Walker of Bowland, C.B., at the request of the Directors, kindly consented to take the chair on the occasion.

Destruction done by Wire Worms.—A letter was submitted from Miss E. A. Ormerod of Dunster Lodge, Isleworth, the consulting entomologist of the Royal Agricultural Society of England, sending copies of circulars asking information respecting the injuries caused by wire worms to various crops, and stating that it is intended to collect and publish the results of the observation and practical experience of agriculturists in all parts of the kingdom. Mr. Menzies stated that if any members could give information he would be happy to supply them with queries to answer.

MEETING OF DIRECTORS, 21st JUNE 1882.

Present.—Sir Alex. Muir Mackenzie, Bart.; Sir James H. Gibson-Craig, Bart.; Dr. Balfour; Mr. Cunningham, Tarbreoch; Mr. Dingwall, Ramornie; Mr. Johnstone Douglas of Lockerbie; Mr. Scott Dudgeon, Longnewton; Mr. Dudgeon, Easter Dalmeny; Colonel Gillon of Wallhouse; Mr. Hope, East Barns; Mr. Irvine of Drum; Mr. Eliott Lockhart of Borthwickbrae; Mr. Mackenzie of Portmore; Mr. Mylne, Niddrie Mains; Mr. Nicoll, Littleton; Mr. Pott of Dod; Mr. John Turnbull Smith, C.A.; and Dr. Aitken—Sir Alex. Muir Mackenzie in the chair.

Apologies were reported for the absence of—Sir Henry J. Seton Steuart, Bart.; Mr. Balfour of Balbirnie, and Mr. Walker, Portlethen.

The business had reference principally to the Glasgow Show, and to the subjects to be brought before the General Meeting of this date.

MEETING OF DIRECTORS, 1st NOVEMBER 1882.

Present.—Sir G. Graham Montgomery, Bart.; Sir James H. Gibson-Craig, Bart.; Mr. Ainslie of Costerton; Mr. Dingwall, Ramornie; Mr. Scott Dudgeon, Longnewton; Mr. Dudgeon, Easter Dalmeny; Mr. Elliot, Blackhaugh; Rev. John Gillespie, Mouswald Manse; Colonel Gillon of Wallhouse, Colonel Hare of Calder Hall; Mr. Irvine of Drum; Mr. Eliott Lockhart of Borthwickbrae; Mr. Murray of Dollerie; Mr. Mylne, Niddrie Mains; Mr. Nicoll, Littleton; Mr. Pott of Dod; Mr. John Turnbull Smith, C.A.; Mr. Villiers, Closeburn Hall; Mr. Walker of Bowland, C.B.; Colonel Williamson of Lawers; Professor Wilson; and Dr. Aiken—Mr. Dingwall in the chair.

Mr. F. N. **Menzies** reported apologies for the absence of the Earl of Glasgow; Sir Windham C. Anstruther, Bart.; Admiral Sir William Edmonstone, Bart.; Sir Henry Seton Steuart, Bart.; Sir Alexander Muir Mackenzie, Bart.; Captain Boyle of Shewalton; Mr. Mackenzie of Portmore; Mr. Scott, Glendronach; and Mr. Walker, Portlethen.

Deceased Members.—It was resolved to record in the minutes an expression of the Directors' deep regret at the deaths of Mr. Robert Pillans Newton of Castlandhill, Mr. Robert Balfour Wardlaw Ramsay of Whitehill, and Mr. John Stirling of Kippendavie, and of their sense of the valuable assistance which the Society had received from them as Directors and members of various committees.

Glasgow Show, 1882.—The Directors approved of the awards at the late Show at Glasgow, and the chairman was authorised to sign orders for the money premiums, which the Secretary was instructed to issue, along with the medals, as early after Martinmas as convenient. *Forage.*—A letter was read from Sir William Forbes of Craigievar, Bart., reporting, with regard to the forage supplied by Mr. William Buchanan, 401 Parliamentary Road, Glasgow, at the Society's Show, that the quality of every class of food was excellent and the quantity abundant; and that Mr. Buchanan did everything in his power to supply the wants of all.

Argyll Naval Fund.—On the recommendation of the Committee in charge of this fund, it was resolved to place on the list of recipients Mr. George Price Webly Hope, at present on board the Britannia, in room of Mr. Godfrey Macalister, who has been promoted to the rank of lieutenant.

Chemical Department.—The reports of analyses sent by local anlytical associations were remitted to the Committee in charge of the Chemical Department.

Experimental Stations.—The Secretary reported that, in accordance with Dr. Aitken's request, he had advertised that he would attend at the experimental station at Pumpherston on the 24th October to explain the experiments. It is now arranged that Dr. Aitken is to be at Harelaw Station, Longniddry, on the 7th November, for the same purpose, leaving Edinburgh at 9.20 A.M.

Agricultural Education.—The Secretary reported that the examination of candidates for the Society's bursaries took place on the 25th of October, when twelve students enrolled their names,and the following passed:—For bursaries of £20—John Bardgett, Stockbridge Mill, Tirrel, Penrith; A. H. Gibson, Kirkcaldy; and Robert Seton, Rampyards, Watten. For bursaries of £10—Alexander Johnstone, 21 St. Andrew Square, Edinburgh; and John Rosie, 20 Vansittart Street, Wick.

Nomination of Directors by Show Districts.—The report of the nomination of Directors by the eight show districts was submitted, from which it appeared that the following members had been nominated and recommended to the Board to act as Ordinary Directors, in terms of the new regulations:—Robert Easson, Scones Lethenty, Perth district; Lawrence Drew, Merryton, Hamilton, Glasgow district; J. T. S. Paterson, Plean, Stirling district; Robert O. Farquharson of Haughton, Aberdeen district; William Wilson, Wolfstar, Edinburgh district; James M'Queen of Crofts, Dumfries district; J. Shaw, Skaithmuir, Kelso district; D. Forbes of Culloden, Inverness district.

Office-Bearers and Directors.—It was remitted to a Committee consisting of Lord Polwarth; Lord Balfour of Burleigh; Sir. M. R. Shaw Stewart, Bart.; Sir A. M. Mackenzie, Bart.; Sir J. R. Gibson Maitland, Bart.; Mr. Cunningham, Tarbreoch; Mr. Dingwall, Ramornie; Mr. Scott Dudgeon, Longnewton; Rev. John Gillespie, Mouswald Manse; Mr. Pott of Dod; Mr. Ralston, Glamis; Mr. Eliott Lockhart of Borthwickbrae; Mr. Mackenzie of Portmore; and Mr. Villiers, Closeburn Hall—to prepare a list of Office-Bearers and Directors, and to submit it for consideration at the December meeting.

General Shows.—It was remitted to the Committee on General Shows to suggest the amount of prizes and adjust the regulations for the General Show to be held at Inverness in 1883. It was also remitted to the same Committee to prepare the classes of stock for the Edinburgh Show in 1884.

The following Committee was appointed to consider suggestions by Colonel Williamson of Lawers, and the improvement of the arrangements connected with the General Shows of the Society:—Colonel Williamson of Lawers, Convener; Mr. Eliott Blackhaugh; Mr. Scott Dudgeon, Longnewton; Mr. Allan, Munnoch; Mr. Villiers, Closeburn Hall; Colonel Gillon of Wallhouse; Sir James H. Gibson-Craig, Bart.; Mr. Pott of Dod; Rev. John Gillespie, Mouswald Manse; Mr. Mollison, Dochgarroch Lodge; Mr. Walker, Portlethen; Mr. Drew, Merryton; Lord Arthur Cecil—with power to add to their number.

Miscellaneous Remits.—To the Committee on Essays and Reports, to read and report on papers lodged in 1882, and revise the list for 1883; to the Committees on District Shows and on Cottages and Gardens, to revise the awards for 1882, and consider the applications for 1883.

District Competitions.—The following transferences of premiums were reported:—*Eastern District of Berwickshire.*—The mare belonging to Gavin Jack, Foulden Newton, which won the first prize in 1881, having failed to produce a foal within eleven months from the date of the Show, the premium has been transferred to Alex. Flint, Nether Mains, for his mare, which stood second; and the second and third prizes have been transferred to Henry Craw, Foulden West Mains, and Gavin Jack, Foulden Newton, respectively, for their mares, which stood third and fourth. *Machars District of Wigtownshire.*—The mare belonging to William Routledge, Elrig, which carried the second prize in 1881, not having proved in foal, the premium has been transferred to T. & J. Picken, Barsalloch, for their mare which stood third;

and the third prize has been awarded to Sir Herbert E. Maxwell, Bart., M.P., for his mare, which was highly commended.

PRESENTATION OF BOOKS.—The following works were presented to the Society's library by the authors, and accepted with thanks:—"The Principles and Practice of Veterinary Medicine," by Principal Williams, F.R.C.V.S., F.R.S.E., &c.; "History of Polled Aberdeen or Angus Cattle," by James Macdonald, editor, *Irish Farmers' Gazette*, and James Sinclair, sub-editor, *Irish Farmers' Gazette*; "The Horse-Owner's Safeguard," by George S. Heatley, veterinary surgeon; "Report on the Forests of Northern Arakan, with statistics concerning the trade in timber, and proposals regarding the introduction of a system of forest conservancy," by J. Nisbet, officiating deputy conservator of forests.

MEETING OF DIRECTORS, 6TH DECEMBER 1882.

Present.—Sir Alexander Muir Mackenize, Bart.; Sir James Ramsay Gibson Maitland, Bart.; Mr. Ainslie of Costerton; Mr. Cunningham, Tarbreoch; Mr. Dingwall, Ramornie; Mr. Johnstone Douglas of Lockerbie; Mr. Dudgeon, Easter Dalmeny; Mr. Scott Dudgeon, Longnewton; Colonel Gillon of Wallhouse; Rev. John Gillespie, Mouswald Manse; Mr. Forman, Duncrahill; Mr. Hope, East Barns; Mr. Irvine of Drum; Mr. Mackenzie of Portmore; Mr. Mollison, Dochgarroch Lodge; Mr. Murray of Dollerie; Mr. Mylne, Niddrie Mains; Mr. John Turnbull Smith, C.A.; Mr. Villiers, Closeburn Hall; Professor Wilson; and Dr. Aitken—Sir Alexander Muir Mackenzie, Bart., in the chair.

Mr. F. N. MENZIES reported apologies for the absence of Sir Michael R. Shaw Stewart, Bart.; Sir W. C. Anstruther, Bart.; Admiral Sir William Edmonstone, Bart.; Sir Simon Macdonald Lockhart, Bart.; Sir Henry J. Seton Steuart, Bart.; Colonel Hozier of Newlands, Mr. Nicoll, Littleton, Mr. Pott of Dod; and Mr. Walker, Portlethen.

DECEASED MEMBERS.—Before proceeding to the business of the day, the Board directed the Secretary to record in the minutes the deep regret with which the Directors regard the death of Mr. Graham Binny, W.S., and to express their sense of the assistance which the Society had for so long a period received from him as a member, a Director, and Chairman of the Law Committee.

Letters were read from Mr. R. G. Wardlaw Ramsay of Whitehill, conveying to the Directors his hearty thanks for their kind expressions of feeling in regard to the death of his father; and from Mrs. Newton, of Polmont Bank, tendering her best thanks to the Board for their appreciation of the services rendered to the Society by her late husband.

GENERAL MEETING.—The anniversary general meeting of the Society was fixed to be held on the 17th of January 1883, being the third Wednesday of the month and the usual day for holding the meeting.

OFFICE-BEARERS FOR 1883.—The report by the Committee on Office-Bearers and Directors for 1883 was read, and the Secretary was instructed to communicate with the nobleman and gentleman suggested to fill the vacancies which occur in January next before publishing their names.

GENERAL SHOWS.—*Inverness*, 1883.—At the meeting of the Board in November, it was remitted to the Committee on General Shows to suggest the premiums and revise the regulations. The Committee met on the 22nd of November and suggested the premiums, and recommended that the Show should be held at the usual period, namely, from the 24th to the 27th of July, both days inclusive.

The Board approved of the report generally, and the Secretary was instructed to submit the premium list and regulations to a meeting of members to be held in the Caledonian Hotel, Inverness, on Friday the 22nd December, at twelve o'clock.

Centenary Show at Edinburgh in 1884.—The classes for the Show at Edinburgh in 1884, as suggested by the General Show Committee, were submitted to the Board, previous to being laid before a meeting of members, to be held in the Society's Hall, 3 George IV. Bridge, Edinburgh, on Wednesday the 20th current, at 1.30 P.M.

DISTRICT SHOWS AND COTTAGE COMPETITIONS.—The reports by the Committees on District Shows and on Cottage Competitions, detailing the awards at the competitions held during 1882, and suggesting the lists for 1883, were read, and the new proposals were ordered to be printed, and submittted to the next meeting of the Board.

HIGHLAND INDUSTRIES AND FISHERIES.—The Special Committee on this subject reported that it was most desirable that the Society should offer prizes for fish products of Scotland at Inverness, and perhaps for fishing boats, gear, &c., and that the Board should also include in the premium book subjects for essays on the improvement of fish culture and other subjects connected with Highland industries and fisheries.

ENSILAGE.—The report by a Special Sub-committee on this subject suggested that, with, the view of testing the suitability of the system to the agriculture of this country, the Directors should set on foot a practical experiment, as likely to tend to much more trustworthy results than can be obtained from a report. The subject was remitted to a Special Sub-committee to prepare a scheme showing the probable cost, and crops to be experimented on.

DISINFECTION OF RAILWAY TRUCKS.—A representation of the Local Authority of Perthshire on the subject of moving cattle trucks after unloading without their having been disinfected was considered, and the Secretary was instructed, after consulting the Act, to write to the Privy Council if necessary.

POLLED HERD BOOK.—A letter was submitted from Mr. Alexander Ramsay, Banff, presenting on behalf of the Polled Cattle Society copy of vol. vii. of the Polled Herd Book for the library of the Society. The volume was accepted with thanks.

MEETING OF DIRECTORS, 3RD JANUARY 1883.

Present.—Sir William C. Anstruther, Bart.; Admiral Sir William Edmonstone, Bart.; Sir G. Graham Montgomery, Bart.; Sir Alexander Muir Mackenzie, Bart.; Sir Simon Macdonald Lockhart, Bart.; Sir James H. Gibson-Craig, Bart.; Mr. Dingwall, Ramornie; Mr. Scott Dudgeon, Longnewton; Mr. Dudgeon, Easter Dalmeny; Rev. John Gillespie, Mouswald Manse; Colonel Gillon of Wallhouse; Colonel Hare of Calder Hall; Mr. Mackenzie of Portmore; Mr. Eliott Lockhart of Borthwickbrae; Mr. Murray of Dollerie; Mr. Pott of Dod; Mr. Ross, Bachilton; Mr. John Turnbull Smith, C.A.; Mr Villiers, Closeburn Hall; Mr. Walker, Portlethen; Professor Wilson; and Dr. Aitken—Sir Alex. Muir Mackenzie in the chair.

Mr. F. N. **MENZIES** reported apologies for the absence of the Hon. G. R. Vernon; Sir Henry Seton Steuart, Bart.; Captain Boyle of Shewalton; Mr. Cunningham, Tarbreoch; Mr. Charles Dalrymple of Newhailes, M.P.; Admiral Maitland Dougall of Scotscraig; Mr. Johnstone Douglas of Lockerbie; Mr. Irvine of Drum; Mr. Mollison, Dochgarroch Lodge; Mr. Ralston, Glamis House; Mr. Campbell Swinton of Kimmerghame; and Mr. Walker of Bowland, C.B.

DEATH OF THE EARL OF WEMYSS AND MARCH.—Before proceeding with the business on the programme the following Resolution was unanimously adopted:—"The melancholy intelligence of the death of the Right Hon. the Earl of Wemyss and March having been communicated to the Directors, they desire to express the sentiments of regret for his loss and of respect for his memory which they entertain. Elected a member of the Society at the general meeting held on the 12th of January 1819, his Lordship filled the office of Extraordinary Director in 1824 and 1825, and of Vice-President during four different periods between 1827 and 1878. According to priority in date of election, the Earl of Wemyss and March was the second oldest member, and throughout the sixty-four years of his connection with the Society always evinced great interest in its affairs. One of the last acts of his Lordship in connection with the Society was to grant, in 1877, a portion of his home farm at Harelaw, for the purpose of establishing an experimental station in connection with the Society's chemical department. It is therefore fitting that the Directors should record in the minutes an expression of the Society's gratitude for the cordiality with which his Lordship promoted its interests.

A letter was reported from Mrs. Graham Binny, requesting the Secretary to convey to the Directors her sincere thanks for the manner in which they had recorded their regard and esteem for her late husband.

OFFICE-BEARERS.—The Secretary reported that the names of the noblemen and gentlemen to be proposed by the Directors at the general meeting on the 17th current to fill the vacancies in the list of office-bearers for 1883 had been published in terms of the Charter.

INVERNESS SHOW, 1883.—The report of the meeting of members held at Inverness on the 22nd of December was submitted, from which it appeared that the premium list for the Show, to be held there from the 24th to the 27th of July, was unanimously approved. In regard to procuring an entire horse to travel in the district, the following Committee was appointed to select a suitable animal at Glasgow and arrange for its service:—Mr. Mollison, Dochgarroch Lodge, for Inverness-shire: Mr. Mackenzie, Dalmore, for Ross; Mr. Walker, Altyre, for Morayshire; Mr. Duff Dunbar of Hempriggs, for Caithness-shire; Mr. Dudgeon, Crakaig, for Sutherlandshire; and Mr. Anderson of Lochdhu, for Nairnshire.

Edinburgh Show, 1884.—The Secretary reported that the list of classes of stock, as suggested by the Committee on General Shows, had been approved of, subject to a suggestion by Mr. Little, Fauld, that there should be separate sections for Oxford Down sheep. The Board considered that there would be no competition for Oxford Downs, and did not agree to the proposal.

Foot-and-Mouth Disease.—The Secretary stated that foot-and-mouth disease having broken out at Newcastle, he had immediately telegraphed to the Privy Council Office that there was great excitement in Edinburgh owing to the outbreak, and trusting that the movement of cattle into Scotland would be at once prohibited, and he had since received the following reply :—

"44 Parliament Street, Westminster, S.W.,
2nd January 1883.

"Sir,—I have submitted to the Lords of the Council your telegram of the 28th ult., and I am directed to state, in reply, that their Lordships are of opinion that it is unnecessary to impose any further restrictions on the movement of animals from England and Wales into Scotland, as by the present orders no animals can be moved into Scotland without a previous application to, and the consent of, the Local Authority for that district in Scotland into which the animals are to be moved.

"I am to add that all the affected animals at Newcastle, and those that had been herded with them, have been slaughtered, and the places thoroughly cleansed and disinfected.—I am, sir, your obedient servant.

(Signed) "Herbert M. Suft.

"The Secretary of the
Highland and Agricultural Society of Scotland."

Agricultural and Forestry Examinations.—The examinations in agriculture and forestry were fixed to be held on the 26th, 27th, and 28th March—candidates being required to enter their names before the 19th March with the Secretary.

MEETING OF DIRECTORS, 17th JANUARY 1883.

Present—The Earl of Stair, K.T.; Admiral Sir William Edmonstone, Bart.; Sir Alexander Muir Mackenzie, Bart.; Sir Simon Macdonald Lockhart, Bart.; Sir James H. Gibson-Craig, Bart.; Mr Balfour of Balbirnie; Mr Cunningham, Tarbreoch ; Mr Dingwall, Ramornie ; Admiral Maitland Dougall of Scotscraig ; Mr Dudgeon, Easter Dalmeny ; Mr Scott Dudgeon, Longnewton ; Mr Elliot, Blackhaugh ; Colonel Gillon of Wallhouse ; Lieut.-Colonel Hare of Calder Hall ; Mr Hope, East Barns ; Mr Irvine of Drum ; Mr Eliott Lockhart of Borthwickbrae ; Mr Mackenzie of Portmore ; Mr Mollison, Dochgarroch Lodge ; Mr Pott of Dod ; Mr Ralston, Glamis House ; Mr J. Turnbull Smith, C.A.; Mr Villiers, Closeburn Hall ; Mr Walker of Bowland, C.B.; Professor Wilson ; Dr Aitken—Sir Alexander M. Mackenzie, Bart., in the chair.

Mr F. N. Menzies reported apologies for the absence of the Earl of Glasgow ; Sir Michael R. Shaw Stewart, Bart.; Sir W. C. Anstruther, Bart.; Captain Boyle of Shewalton ; Mr Dalrymple of Newhailes, M.P.; Mr Murray of Dollerie ; and Mr Scott, Glendronach.

A letter was read from the Earl of Wemyss and March expressing his grateful sense of the kindly feeling that dictated the tribute of respect to his father's memory passed at the meeting of the Board on the 3d instant.

The other business had reference principally to the subjects to be brought before the general meeting of this date.

PROCEEDINGS AT GENERAL MEETINGS.

GENERAL MEETING 21st JUNE 1882.

Sir **Alexander Muir Mackenzie** of Delvine, Bart., in the chair.

New Members.—140 noblemen and gentlemen, including 7 agricultural diploma holders, were balloted for and duly elected members of the Society.

The Glasgow Show.—Colonel **Gillon** of Wallhouse reported that the arrangements for the General Show, to be held at Glasgow from the 25th to the 28th of July, were in a satisfactory state of advancement, and that there was every promise of a most successful meeting. The entries closed on the 14th, and the following was an abstract of the head of stock and implements, contrasted with those of the last Show at Glasgow in 1875:—

	1882.	1875.
Cattle,	376	411
Horses,	331	405
Sheep,	490	628
Swine,	51	58
Poultry,	310	665
Dairy Produce,	122	152
Implements,	2622	2220

The contract for the erection of the yard was in the hands of Mr. Matthew Richardson of Annan, who had done the work on eleven previous occasions. The forage contract had been given to Mr. William Buchanan, 391 Parliamentary Road, Glasgow, who so satisfactorily supplied the forage on the occasion of the last Show at Glasgow in 1875. At a meeting of the General Committee held at Glasgow on the 14th instant, the following Sub-committees were appointed:—

Admission to Parade Gallery.—Mr. Robert Young, Glasgow, convener; Mr. Craig, Robroyston; Mr. Hunter, Coplawhill; and Mr. Tennant of Ryeland. *Forage Yard.*—Mr. M'Kean, Lumloch, convener; Mr. Park, Dechmont; and Mr. Speir, Newton. *Ball.*—Lieutenant-Colonel J. M. Forrester, convener; Sir Michael R. Shaw Stewart, Bart.; Colonel Sir Archibald C. Campbell, Bart.; Sir James Bain; Mr. Fleming of Beaconsfield; Mr. Robert Young, Glasgow; Lieutenant-Colonel Matheson, C.B.; Mr. King of Levernholm; Mr. Robert Williams, The Green, Wishaw; Mr. Cooper of Failford; Colonel Hozier of Newlands; Mr. Cross, jun., Glasgow; Mr. John Clark Forrest, Carnbrue House, Bellshill; Mr. Martin, yr. of Auchendennan; Mr. Allan Kirkwood, Killermont; Mr. Oswald of Auchincruive, Mr. John Windsor Stuart, Rothesay; Mr. Smith, Castle Mains, Douglas. *Police.*—The Hon. John Ure, Lord Provost, convener; Councillor John Young; and Councillor J. M. Forrester.

For the supply of refreshments in the yard, the contracts have been given to William M'Dougall, 8 Charing Cross, Glasgow; Robert Wilson, 251 Argyle Street, Glasgow; John Mitchell, 3 India Street, Edinburgh; and John Warner, 46 Albany Street, Edinburgh. During the Show the headquarters of the Society will be at the George Hotel, George Square, Glasgow. The district connected with the Show embraces the counties of Lanark, Ayr, Argyll, Renfrew, and Bute. The names of the gentlemen comprising the Committee of Superintendence are as follow:—

Lanarkshire.—Robert Paterson of Birthwood, Biggar; Hugh Lindsay, Meadowflat, Thankerton; Andrew Fleming, Calla, Carnwath; Andrew Smith, Castlemains, Douglas; James Holmes of Kirkstyle, Cornsilloch, Hamilton; Colonel Carrick Buchanan of Drumpellier, C.B., Coatbridge; John Speir, Newton, Cambuslang; Thomas Tennent of Ryeland, Strathaven; James Park, Dechmont, Blantyre; Robert M'Kean, Lumloch, Bishopbriggs.

Ayrshire.—The Most Noble the Marquis of Ailsa, Culzean Castle, Maybole; Hugh Hamilton of Pinmore, Girvan; R. A. Oswald of Auchencruive, Ayr; W. S. Cooper of Failford, Tarbolton; James Clelland, Knockinlaw, Kilmarnock; Charles G. Shaw, County Buildings, Ayr.

Argyllshire.—John MacArthur, Barbreck, Inveraray; Sir J. W. P. Campbell Orde of Kilmory, Bart., Lochgilphead; Duncan Buchanan of Auchenbreck, Colintraive; James Campbell, Ormaig, Kilmartin, Lochgilphead; Robert Laurie, Fincharn, Lochgilphead; George Willison, Kilchattan, Kilbrandon, Oban.

Bute.—John Windsor Stuart, factor to the Marquis of Bute, Rothesay; James Duncan, Rhubodach, Rothesay; Robert Robertson, Breachsch, Millport; James Allan, jun., Balnacoole, Arran.

City of Glasgow.—Sir James Bain, 3 Park Terrace, Glasgow; J. B. Fleming, Beaconsfield, Kelvinside, Glasgow; James King of Levernholm, 115 Wellington Street, Glasgow; Bailie Dunlop, 100 Wellington Street, Glasgow; Councillor John Young, 30 Corunna Street, Glasgow; Councillor J. M. Forrester, 135 Buchanan Street, Glasgow.

Glasgow Agricultural Society.—James Craig, Robroyston, Bishopbriggs; Robert Young, 62 Robertson Street, Glasgow; Charles Howatson of Glenbuck, Lanark; Lawrence Drew, Merryton, Hamilton; Alexander Allan, Carbarns, Wishaw; William Wallace, 7 Graham Square, Glasgow.

THE INVERNESS SHOW.—Colonel GILLON also reported that ground has been offered for the Show at Inverness on the farm of Seafield, close to the railway station. It is an excellent field for the purpose, being good dry bottom, and third year's grass.

CONFIRMATION OF BYE-LAWS.—Mr. SCOTT DUDGEON, Longnewton, moved that the bye-laws passed at the last general meeting in January be confirmed by this meeting. It was necessary that the bye-laws should be passed by two general meetings before they became laws of the Society, and on this occasion he felt that it was a mere matter of form, as he did not expect that there would be any objections. The Board, anticipating that this meeting would confirm the decision of last meeting, and in order that the bye-laws might come into operation this season, had appointed a Committee to draw up regulations giving effect to the seventh bye-law. That Committee had reported to the Directors, and they had agreed to a set of regulations which were now upon the table. There had previously been differences of opinion, but he hoped that the Society would now act as one, and carry out the spirit of these regulations. He saw nothing in these regulations to prevent the members of the Society in different districts, if they took the opportunity now given them, to send to the Board of Management men who were fully representative of their interests.

Mr. MACKENZIE of Portmore seconded the motion. He hoped these regulations would do the good for the Society which Mr. Scott Dudgeon had desired.

The bye-laws were then formally confirmed.

The following are the proposed regulations for the nomination of Directors by the Show districts under the 7th bye-law, which were laid on the table:—

"1. Meetings shall be held each year in August or September, at each of the eight places where the Shows of the Society are usually held, of the members resident within each respective Show district, for the purpose of nominating members to represent these districts on the Board of Management. 2. The dates of these meetings shall be fixed by the Secretary, and called by advertisement in the newspaper or newspapers most widely circulated in each district, and shall be attended by the Secretary, or some one authorised by him to represent him. 3. At any of these meetings a nomination shall only be valid provided it is supported by at least five members of the Society, who may either be present at the meeting, or, if absent, may signify their support by mandates duly signed by them to that effect, and delivered to the Secretary or his representative at the meeting; and no nomination shall be transmitted to the Directors unless at least fifteen members be present, either personally or by mandate. 4. In the event of more persons than one being duly nominated at any of said meetings, the Secretary shall, not later than the first day of October, send by post to every member resident within such district a 'voting paper,' with the names of the persons nominated printed thereon, according to the form hereto annexed, requesting that the same may be filled up and returned to him within seven days. From the returns so received before the 10th day of October, the Secretary shall calculate the number of votes recorded for each nominee, and the one who is found to have the largest number shall be the member nominated and recommended to the Board to act as an Ordinary Director, in accordance with the 7th bye-law; provided not less than one-sixth of the members resident within that Show district shall have recorded their opinion, failing which there shall be no nomination for that district. 5. To provide for the requirements of the 5th bye-law, that of the thirty-two Ordinary Directors 'at least one-half shall be tenant-farmers, or others paying the lower subscription,' it shall be imperative that each district shall nominate, at least every alternate year, a tenant farmer or other member paying the lower subscription. In calling the various meetings by advertisement, the districts shall be informed whether the nomination of a tenant or other member paying the lower subscription must be made."

INTERNATIONAL FISHERIES EXHIBITION.—Sir JAMES GIBSON-CRAIG, Bart., said he had not thought it necessary to make any formal report on the International Fisheries Exhibition for two reasons. In the first place, he thought they would all be there to judge for themselves; and, in the second place, the matter had not been finally wound up. This exhibition was held in the Waverley Market, was opened on the 12th April by the Earl of Rosebery, and was kept open till the 29th April. He thought it had been a great success, and financially they had made a considerable sum. On that, the the most important point, it was impossible for him to touch, for there were several things unsettled. They had agreed to publish the prize essays, and until that was done they could not definitely say what sums were at their disposal; but he hoped they should have a very substantial amount for the benefit of the classes for whom this exhibition was got up—namely, the fishing population.

AGRICULTURAL EDUCATION.—Mr. Mylne, Niddrie Mains, reported that the annual exmainations, held under the Society's Educational Charter took place on the 17th, 18th, and 19th April, and that the following gentlemen passed :—

For Diploma—A. S. Alexander, 4 Belhaven Terrace, Glasgow; Thomas A. Buttar, Corston, Coupar-Angus; Thomas Henry Ensor, 54 South Street, Dorchester, Dorset; William Norrie, Cairnhill, Monquhitter; Turriff; Peter Reid, Waulkmilton, Linlithgow; E. Hedley Smith, B.L., Whittinghame, Prestonkirk; Robert P. Wright, Downan, Ballantrae.

For First-Class Certificates—Daniel Finlayson, Wick; Benjamin Hepburn, Preston Mains, Prestonkirk; James Rodger, Inchock, Arbroath.

He also announced that, after special examination, the prizes given in books to the agricultural class in the Edinburgh University, had been awarded as follows :—1, £5 to Henry Prain, Mains of Castle-Huntly, Longforgan; and 2, £2, 10s. each to W. J. Thomson, Glasgow, and Robert P. Wright, Downan, Ballantrae.

Mr. ELIOTT LOCKHART of Borthwickbrae reported that, in accordance with the recommendations of the Special Committee on Agricultural Education, the Secretary had communicated with Sir Francis R. Sandford, on the subject of having the teaching of agriculture included in the subjects taught in the board schools in Scotland; and he read the following letter received in reply :—

"Scotch Education Department,
London, 7th March 1882.

"Sir,—I have the honour to acknowledge the receipt of your letter of the 2nd inst. Their Lordships have placed the principles of agriculture among the subjects of instruction in the training colleges, and recognise the subject (under the Scotch Code of 1882, which will shortly be circulated) as one of those in which pupil teachers may be examined by the Science and Art Department before going to a training college. The subject is also recognised by the English Code just presented to Parliament as one of those for which grants may be made to elementary schools. But my Lords have made no corresponding alteration in the schedule (No. IV.) of such subjects in the Scotch Code for 1882, which they have thought it best to leave as it stood this year, confining their attention for the present to alterations in the Code for England. You may not be aware that the Commissioners on Endowed Institutions in Scotland, whose report on the subjects in the 4th schedule was presented to Parliament last year, did not recommend that agriculture should be included in that schedule.—I have the honour to be, sir, your obedient servant, F. R. SANDFORD."

He said that if agriculture had been included in the English Code, he did not see why it should not be included in Scotland. He therefore moved that the Department should be again memorialised to the effect that agriculture be included as one of the subjects in elementary schools. He further said that, in accordance with the notification from the Secretary that the Royal Agricultural Commission would be prepared to take the evidence of two of the Directors, the Rev. J. Gillespie and himself attended, and were examined on the 16th of February. Their evidence was mainly in terms of the report of the Special Committee, which was presented and approved at the last general meeting of the Society—(1) That the first principles of agriculture should be placed on the list of subjects that might be taught in elementary schools, thus paving (2) the way for classes under the Science and Art Department; (3) but that there was an urgent need for one or more agricultural colleges in Scotland with farms attached, and at which practical instruction would play an important part, but with charges so moderate as to be within the means of farmers, somewhat on the same system as the Guelph College, Ontario, or Glasnevin, Ireland. They pointed out however, that to ensure this end such colleges would either have to be endowed by or receive considerable aid from Government. They were asked in cross-examination if it would be right that one industry should receive greater aid from Government than another, to which they replied that in all other countries agricultural schools and colleges were suppprted by the State, and that this was already done at Glasnevin, Ireland; that the principal of Government aid was already admitted; and that it was only asked that this should be extended. It was suggested by one or two members of the commission that the Highland and Agricultural Society might expend some of its funds in establishing such a college. To this it was replied that such a proposal had not been considered, and that a large portion of the income of the Society was derived from its invested capital.

The motion was adopted.

Free Life Members.—Mr. Mylne, Niddrie Mains, reported that the holders of the Society's agricultural diploma, who as such are elected free life members, had recently memorialised the Council on Education pointing out the want of some distinctive title attached to the diploma, and praying that the title "F.H.A.S." (Fellow of the Highland and Agricultural Society of Scotland) be granted to them. The memorial was submitted to the Council, who, after having duly deliberated on the subject, agreed to accede to the prayer of the memorial.

Forestry Department.—Dr. Balfour reported that the forestry examinations were held on the same days as those under the Agricultural Educational Charter, when the following candidates passed :—*For First-Class Certificates.*—A. H. Gibson, 59 Nicol Street, Kirkcaldy ; Alex. Inglis, Tyninghame, Prestonkirk.

Experimental Stations and Chemical Department.—Dr. Aitken, the chemist of the Society then read his report on the Chemical Department, which is as follows :—Both the experimental stations of the Society are now in full operation. The manures have been applied, and the seed sown under very favourable conditions, and we have a fair prospect of a more successful season for our investigation than we have yet experienced. We are now entered upon the second rotation, and the difficulties we have hitherto had to contend with incident to the youth of our experiments are now overcome. The soils which we are operating upon have been under a strict regimen for four years, so that any material interferences due to former systems of cropping and manuring may now be considered at an end, and we may accept with confidence the teachings which the present season will bring us. Four years ago we started experiments whose chief object was to determine the relative crop-producing value of light manures which resemble each other chemically, but which are supplied in various forms, and are derived from various sources. We are prepared to receive with great caution the teachings of the first rotation, and to wait with patience for the results of the following years. Nevertheless, we have already learned much from these experiments. We have learned that various substances similar in composition are very different in their efficacy as manures ; some of them so different that we need not hesitate to accept the information regarding them derived from our experiments young as they are. In other cases the differences observed have been slight, and we have regarded them merely as indications which it would be rash to accept as facts until they have been confirmed by the more reliable testimony of the rotation now begun. It has been noticed on some of the plots of our stations that the manures did not at first appear to have any influence upon the growth of the crop, but that after some time a vigorous growth was apparent, which in some cases took place early enough in the growing season to enable the crop to make up its deficiency, while in other cases it came too late for that purpose. The inference to be drawn from the latter observation is that the manures in question should have been applied earlier. It has been our practice, as is the common practice all over the country, to apply light manures just before sowing the seed ; but it was evident from the results of some of our experiments that it would have been better had we applied the manure, or at least the more insoluble part of it, one, two, four, or even six months before sowing. That some manures are slow working, and some are quick working, is well known, and manure manufacturers, in making up their mixtures, sometimes endeavour to combine these, so as to produce a manure containing ingredients which will gradually become available as the season advances. But, indeed, that is a characteristic of almost all mixed manures. They almost all contain ingredients which require to lie in the soil for a considerable time before they are available for the crops to which they are applied, and in many cases, probably in most cases, a large proportion of the important ingredients do not become available during the growing season. Our experiments have also taught us that when manures are applied which begin to exert their influence late in the growing season they are apt to prolong the period of growth, or, in other words, to retard the time of ripening, and thus in some seasons to do havoc rather than good. Our experiments were originally designed to show what are the best kinds of manure to apply, but it is equally important that we should know when is the best time to apply them. It is not an easy question to answer, inasmuch as the answer depends upon the nature of the crops to which the manure is to be applied, the duration of its growth, and the character of the soil and climate. But our stations are well adapted for carrying on such an experiment, for the soil and climate at Harelaw and Pumpherston are very different, and the rotation we employ gives us a wide range of observation. All that is necessary is that each plot be divided into two equal parts, and that the manures be applied to the one part in autumn or winter, and to the other part in spring. This has now been done ; the one half of each plot was manured in January, and the other half about the beginning of June. The manures applied were the same as those used from the beginning, with the exception that those plots which receive nitrate of soda and sulphate of ammonia had these ingredients omitted from their manures. To apply these salts long before sowing would simply mean to throw them away, and even to apply them at the time of sowing might be attended with considerable loss, as it is long before the roots of the turnip crop are sufficiently grown to absorb them and prevent their being carried down through the soil and run off by the drains during wet weather. The most economical practice is to apply them to the crop shortly before or after singling, and this is the method which will be adopted this year. The application of the various ingredients of a manure at different times no doubt increases the work of the farm and the expense of raising the crop, and it may be that in some cases we shall find that the advantage accruing from this practice is not sufficient to recommend its adoption; but if we find that in some cases a considerable economy is effected, we shall be amply repaid for the great increase of labour and expense incurred in this new investigation. The other advance which I wish to bring before your notice is a still more important one, and one which I hope is destined to do a great work for our agriculture. It is the establishment of field experiment clubs in various parts of the country, acting under the direction of the chemical department of the Society. It must be evident to all who take an interest in such matters that there has been no want of experiments in agriculture during recent years. Experiments are now being carried on by agricultural associations in the following districts:—Lauderdale, Teviotdale, Galashiels, Peebles, Monquhitter, and in the various districts of Ross-shire embraced in the operations of the club already referred to. Besides these, not a few members of the Society, some of whom have all along taken an interest in our experimental work, are in hearty co-operation with us.

Mr. COWE, Balhousie, asked if what Dr. Aitken said in the first part of his paper was that all manures applied to ground were exhausted in four crops?

Dr. AITKEN said his remarks had not been calculated to go that length. What he meant was, that at the experimental stations any influences which would materially interfere with the accuracy of their experiments might now be considered at an end. He did not mean to say that all manures were exhausted in four years, as it was believed that some manures could be felt after 14 or 15 years.

Mr. COWE pointed out that as there were some manures felt after 15 years they could not certainly say what was the effect of any manures they might apply now. If they had no definite line drawn they could not tell what effect the unexhausted manures would have on the crop.

TRANSACTIONS.—Mr. IRVINE of Drum laid on the table volume xiv. (fourth series) of the Transactions of the Society

On the motion of Sir JAMES GIBSON-CRAIG, Bart., a vote of thanks was accorded to the chairman, and the proceedings terminated.

GENERAL MEETING AT GLASGOW, 26TH JULY 1882.

The Right Hon. the EARL OF GLASGOW, Vice-President, in the chair.

The CHAIRMAN said he had the honour of occupying the chair because the Duke of Richmond, he regretted to say, was unable to be present. He would begin the proceedings by proposing those motions which he was sure all would most heartily agree to. The first was that the thanks of the Society be given to the Hon. John Ure, Lord Provost of Glasgow, and the Magistrates and Council of Glasgow, for the excellent accommodation afforded for the Show by the free use of the Green, and for the liberal contributions of £200 in aid of the auxiliary fund. He was sure they all felt exceedingly indebted to the Lord Provost and Magistrates of Glasgow, and the presence of the Highland and Agricultural Society on Glasgow Green was a very happy emblem of the unity of the interests both of agricultural and commerce.

Sir MICHAEL SHAW STEWART, Bart., seconded the motion, which was unanimously agreed to.

The Earl of GLASGOW moved that the thanks of the Society be given to Sir Michael Shaw Stewart of Greenock and Blackhall, the convener, and the other members of the committee and superintendents, for their very efficient co-operation in the duties devolving upon them. He was sure that the motion would be very cordially received by all present

Sir WILLIAM FORBES seconded.

The Earl of GLASGOW moved a series of motions conveying the thanks of the Society to the Commissioners of Supply for the counties of Lanark, Renfrew, Bute, and Ayr, for their contributions to the funds of the Society.

The motions were carried unanimously.

The Earl of GLASGOW proposed that the thanks of the Society be given to Colonel

Gillon of Wallhouse for the very zealous and efficient discharge of the duties devolving upon him as chairman of the Committee on the General Shows. His Lordship felt quite sure that this motion would be carried with acclamation. They all knew what very severe and arduous and responsible work was entailed upon the holder of that office, and he was sure that they all agreed that no one could have discharged those duties more efficiently than Colonel Gillon.

Mr. VILLIERS, Closeburn Hall, seconded, and the motion was enthusiastically carried.

The Earl of GLASGOW stated that this exhausted the list of motions on the table. He desired to express the gratification that it was to himself to have the honour of presiding over a meeting in connection with the Show, which he had every reason to believe would be one of the most successful that this Society had held. The implements were far above the average, and the live stock was at least up to the average. He might say one other word, which was this. Often and often the weather had been extremely trying on these occassions, and he was sorry to say that Glasgow had not got the best name as to weather; but they might be extremely thankful that, with the exception of some passing showers, the skies had been eminently propitious for this meeting. He sincerely hoped that the better weather might be only a forecast of those better hopes for agriculture which they were all so anxious to be able to entertain.

Mr. MARTIN, yr. of Auchendennan said, as the object of this meeting was to enable the members to give suggestions to the Directors, he had to place before them one or two matters of detail which he believed would commend themselves to the official staff and to the members generally. The first was with reference to the members' tickets, and instead of having these sent only to the members living in the district in which the Show was being held, he suggested that they should be sent to all the members who had paid their subscriptions. That, he believed, would tend to the convenience of the members and the comfort of the officials. There was, however, another and a graver matter to which he wished to direct attention, and that was the appointment of judges for the stock at the Shows. He knew, from his own knowledge as having been a Director, that the Directors did everything in their power to secure the best judges that could be got for the various classes of stock, but unfortunately it was within the knowledge of all of them that the knowledge of various classes of stock was somewhat limited on some occasions. He had been at meetings where judges were appointed where several of the gentlemen present did not take any interest whatever in the class of stock being adjudicated upon. The Directors invited members to send in suggestions and names of those who might be appointed as judges. That was a step in the right direction, but it was a somewhat invidious position to put a member in—because if he was not an exhibitor he probably did not care who the judges were, but if he was an exhibitor there was a certain amount of suspicion that he might want to put in one of his own friends. He had heard the suggestion made when some members proposed certain names that there was a reason for doing so, and that was deemed sufficient to have no attention paid to the suggestion. He thought a much better way to ascertain the wishes of the breeders of stock would be to invite the different Local Societies all over the country to send in the names of gentlemen they could suggest as judges for the Show. It would take away any idea of favouritism, and at the same time it would give the Directors some clear idea of the views of the members in the different parts of the country as to the special classes of stock in which they were themselves interested. The various Societies would deal with the different classes of stock that were seen to the greatest perfection in their neighbourhood; and the members there would most likely know the best men to be nominated for judges. So far as he personally was concerned, he had no complaint to make against the judging in the classes in which he was interested; but there were cases where local circumstances made a man not a suitable judge. It could not be expected that the Directors of the Society sitting in Edinburgh could follow all the details of the various classes, and know where these circumstances existed; but if the members were asked in the way he had suggested they would take care to suggest men who were free of these special conditions. He believed the adoption of these suggestions would secure the unanimous support of all present.

Colonel WILLIAMSON of Lawers said that since they were invited to make remarks, he thought it might not be out of place to make one or two observations on the position they were in that day. Unfortunately he must speak as a Director, but at that moment he would rather speak as a member of the Society. He did not think that the alterations required to make the showyard better than it was that day were of a very momentous character; in fact, to many of them it might seem that the fault was of a somewhat trifling nature. Those discomforts ought, he thought, if possible to be removed. First of all, it would be immensely to the comfort of all and sundry if they could walk from the entrance gate to the centre of the Showyard with dry boots upon their feet. The Powers above had given ample warning that a considerable amount of rain might be expected about this time, and it required a very small amount of brain power indeed to have it arranged that a few hundreds of railway sleepers should be at the gate, and that if necessary they should be put down and covered with ashes to form a passage from the gate to the centre of the yard. Then parties might disperse in different directions, and have their feet a little less wet than had been the case at the present Show. Then again, the arrangements of the showyard were somewhat defective. It seemed a very great hardship that those who showed stock in several classes had to walk under the heavy showers of the previous day from one end of the yard to the other to see their different animals exhibited. He suggested that the judging rings should be put all together somewhere about the centre of yard, and that, he believed, would add greatly, not only to the comfort of the exhibitors, but to all who came to the Show.

Sir Wm. Baillie, Bart., proposed a very hearty vote of thanks to the Earl of Glasgow for presiding over the meeting.

The motion was carried amid applause.

The meeting then terminated.

GENERAL MEETING, 17th January 1883.

The Right Hon. the Earl of Stair, K.T., Vice-President, in the Chair.

New Members.—91 noblemen and gentlemen were balloted for and duly elected members of the Society.

Office-Bearers.—The following noblemen and gentlemen were elected office-bearers for 1883:—*Vice-Presidents.*—The Duke of Portland; the Duke of Sutherland, K.G.; the Earl of Seafield; Lord Lovat. *Ordinary Directors.*—Sir Charles E. F. Stirling, Bart.; Sir Henry J. Seton Steuart, Bart.; Lawrence Drew, Merryton; Robert Easson, Scones, Lethendy; R. O. Farquharson of Haughton; Duncan Forbes of Culloden; James M'Queen of Crofts; J. T. S. Paterson, Plean; James Shaw, Skaithmuir; William Wilson, Wolfstar. *Extraordinary Directors.*—Sir Kenneth S. Mackenzie, Bart.; Sir George Macpherson Grant, Bart., M.P.; Brodie of Brodie; General Burroughs, C.B.; Donald Cameron of Lochiel, M.P.; Alexander Henderson of Stemster; R. B. Æ. Macleod of Cadboll; Cluny Macpherson, C.B.; Major Rose of Kilravock; Evan C. Sutherland-Walker of Skibo; Alexander Forbes Irvine of Drum; Colonel Gillon of Wallhouse; William Dingwall, Ramornie; Adam Smith, Stevenson Mains; Thomas Mylne, Niddrie Mains; Sir Alexander Muir Mackenzie, Bart.; Lord Polwarth; John M. Martin of Auchendennan; Colin J. Mackenzie of Portmore; F. E. Villiers, Closeburn Hall.

The Society's Finances.—Mr. Walker of Bowland, C.B., laid on the table the abstract of accounts of the Society for the past year, which has already been advertised. He further stated that, on behalf of Mr Murray, the Convener of the Finance Committee, he had to bring under the notice of the meeting the proposal, which was passed at two meetings of the Directors in terms of the rules, to lift a sum of £2300, 3s. 10d., which was deposited in the Royal Bank as part of the building fund of the Society, for the purpose of meeting the deficiencies of the last three Shows The deficiency at Kelso in 1880 was £1456, 14s. 4d.; and the loss at Stirling in 1881 was £971, 15s. 3d. In the ordinary course of events this Society anticipated loss at the smaller centres, and recouped themselves by very large profits at the larger centres. They expected that that would have been the result at Glasgow last year, but owing, unfortunately, to the weather and other circumstances, instead of having a large surplus they sustained a loss of £579, 10s. As the ordinary source from which they paid their losses in previous years had failed, it had appeared to the Directors that the most convenient way of paying their debts was to operate on a portion of the fund set apart a good many years ago for the purpose of building new premises. He presumed that might be assumed for some time to be in abeyance. They probably would have another loss at Inverness, but he trusted that they would have another large success in connection with the centenary of the Society. He moved that the resolutions of the Directors be confirmed by this meeting.

Sir James Gibson-Craig, in seconding the motion, said he much regretted that the Society should have to take such a course, but there was no other alternative; and he hoped that their Shows would turn out better results in the future than in the past few years.

Mr Findlay Anderson—Is this to be taken as a loan from the building fund? (Cries of "Oh, no!")

Mr Walker stated that the building fund consisted of money set apart from the general funds of the Society. The sum was not subscribed for a particular purpose, but was made up of sums set aside that the Directors might use for building purposes if they saw reason to do so.

The motion was then agreed to.

THE ARGYLL NAVAL FUND.—Admiral **MAITLAND DOUGALL** of Scotscraig, in submitting a report on the state of this fund, said that he had pleasure in being able to report that it continued to work satisfactorily. They had five young naval officers in connection with it, each of whom received £40 a year. He further found that while their bank account last year showed a balance of £301, the balance this year was £336. The funds now amounted to £6177, 19s. The abstract was signed by Mr. Walker, treasurer; Mr. Anthony Murray, convener of the Committee; and by Mr. Turnbull Smith, the auditor. He had in his hands a letter addressed to the Secretary by the mother of one of their young sailors, and extracts which he read from it showed that this young officer had been taking an active part in the recent Egyptian campaign. He was glad to find from that, while the fund was in a satisfactory state, their young officers were doing their duty in a gratifying way.

THE LATE GLASGOW SHOW.—Colonel **GILLON** of Wallhouse reported that in a financial point of view the General Show held at Glasgow in July last had not been so successful as on some previous occasions. For instance, in 1875 the surplus was above £3300, while in 1882 there had been a deficiency £579. This arose principally from the receipts at the gates having fallen short to the amount of £2982, and the local subscriptions to the sum of £585, as compared with 1875. The Society had not for several years been favoured with suitable weather, and there was no improvement in this respect last year. Indeed, the state of the weather, he had no doubt, deterred many from entering the yard, or even from leaving home. The usual votes of thanks to the Lord Provost and Magistrates of Glasgow, the Commissioners of Supply for the counties embraced in the district of the Show, to Sir Michael Shaw Stewart, Bart., as Chairman, and to the other members of the Local Committee, having been passed at the general meeting of members held in the showyard, it only remained for him to state that the exhibits in the stock department were not inferior to those at any former Show. Among the implements there were several novelties, such as the sheaf string binding machines, the new hay and corn stack drying fan, and the new enamelled iron roofing, all of which attracted great attention on the part of the public. He could not conclude without stating that from the magistrates of the city the Society had received on this, as on all former occasions, the most cordial co-operation. The Society was also deeply indebted to the Earl of Glasgow for presiding at the general meeting of members, in the unavoidable absence of his Grace the Duke of Richmond and Gordon, the President.

INVERNESS SHOW, 1883.—Colonel **GILLON** next reported that the Inverness Show had been fixed to be held from the 24th to the 27th of July, and that entries required to be lodged not later than 1st June for implements and 15th June for stock. The premiums offered amounted to £1978, 8s. A site for the showyard has been offered on the farm of Seafield, close to the railway station. At the request of the Directors, Lord Lovat had kindly consented to act as Chairman of the Local Committee.

EDINBURGH SHOW, 1884.—Colonel **GILLON** then gave in the report on the Show to be held in 1884, which stated that the Society, having been instituted at a meeting held in Edinburgh on the 9th of February 1784, would shortly enter on its hundredth year, and that it had been resolved to celebrate the centenary with becoming interest by holding the General Show at Edinburgh in 1884. A list of the classes of stock and implements for which premiums would afterwards be offered was in course of adjustment, and would be included in the premium-book for the current year. The hope was entertained that the magistrates of the city would co-operate with the Directors in making the meeting one of the most attractive and successful ever held by the Society. In reference to a suggestion by Mr. Howatson of Glenbuck as to the prizes to be given in the blackfaced and Cheviot sheep classes, and the giving of centenary prizes, the matter had been brought before the Directors at their meeting that afternoon, when was referred to the meeting to be held by them on the 7th proximo.

The Hon. **GEORGE WALDEGRAVE LESLIE** asked how soon would the Society's Show be held at Inverness after the meeting of the Royal Agricultural Society at York?

Mr. **BARTLEMORE**, Paisley, stated that the English Show commenced on Monday, 16th July, and continued during the week.

Mr. **ROBERT YOUNG**, corn merchant, Glasgow, wished to draw attention to the expenses of the Society's Show at Glasgow as compared with others. Two Shows were held in Glasgow last year—the local one, with 750 head of stock, and 926 at the Show of the Society. The showyard expenditure of the Society was £2584; and it cost the Glasgow people £535 for their 750 head. Then he saw that they had spent £330 in forage, and the Glasgow people spent but £23. Of course the latter was only a two-days' Show, instead of four as held by the Society; but if it had extended over the four days it would only have been £46. Again, he saw that the Society paid as travelling expenses to judges £149, and the Glasgow people paid £5, 3s. Another item he saw for dining judges, directors, &c., cost £420, while the Glasgow people not only dined their judges and directors, but also the Town Council, for £35. To make a long story short, it cost the Highland and Agricultural Society for every hundred entries, £466; and the Glasgow people, £114. He left it to many gentlemen present, who were large exhibitors, if they were not made as comfortable at the Glasgow Show as at that of the Highland Society?

Colonel GILLON, in replying, stated that the gentleman who had just spoken had not given the name of the Glasgow society to which his remarks applied. He did not think that the two shows could be compared, the societies being so totally different. This was a large national Society; and he was certain, having been a Director for a good many years, that they studied economy in every way, while at the same time they did what they could to please all to whom they were indebted. He did not see how the Lord Provost, Bailies, and Magistrates of Glasgow could have been entertained for £35. He knew that he should not have liked very well to have been at the dinner. But really, as he had said, they could not compare the two societies—the Highland and Agricultural Society of Scotland, and the local society which had been referred to. He had no doubt the latter managed things very well and satisfactorily to themselves; yet he assured the meeting that their Directors tried to please everybody; and although the expenses seemed to be very large, they were not more than they were warranted to incur.

Mr. YOUNG asked if it was not the case that the builder of the Glasgow showyard applied for a schedule to offer for that of the Highland and Agricultural Society, and was refused it?

Mr. MENZIES—The Directors take the contract for five years at a time, and he was informed that the contract was let.

Mr. YOUNG further asked if it was not the case that a letter was written to the applicant stating that his communication would be reported to the Directors; that on his again applying he was informed that the matter was not forgotten, and that he heard no more about it until the matter was closed?

Mr. WALKER hoped the discussion they had just heard would be useful in the future; but should the gentleman who introduced it ascertain the relative costs of the shows of the Royal Society in England, and in a county or district in England, he would find that the difference was very similar.

Mr. YOUNG also stated that in Glasgow they sent a schedule for their local show to the contractor of the Society, and his estimate was over £900, while that of the man who constructed their showyard was £525.

CHEMICAL DEPARTMENT.

Dr. AITKEN gave in the following report on the Chemical Department:—

EXPERIMENTAL STATIONS.—The experiments at the Society's stations have this year been carried out under very favourable conditions. We have now entered upon the second rotation with a crop of turnips at both stations. The manures were applied at two different times, one half of each plot receiving its manure in January and the other half in May. Nothing occurred to interfere with the success of the experiments in the manuring, sowing, or lifting of the crops. The sampling was conducted on a large scale, and in such a manner as to secure a fair average of the growth on each plot. Upwards of 6000 turnips have been sampled, and are now undergoing investigation in the Society's laboratory, which has been enlarged and fitted up in the best manner for the analysis of agricultural products. The good fortune which has attended our operations this year, and the large scale upon which the investigation is being carried on, form a great contrast with the circumstances in which we found ourselves when occupied with our first turnip crop; and we shall ere long be in a position to speak with confidence regarding many points which four years ago were regarded as doubtful, and spoken of simply as indications of facts that might be brought out by future experiments. Alongside of the ¼-acre plots at our stations, we have been carrying on duplicate experiments on a small scale, viz., 1-112 acre. The results obtained on these little plots have never been very satisfactory, and although much trouble has been taken with them, and considerable expense incurred in the endeavour to make them reliable adjuncts to the large plots, they have not fulfilled our expectations, and it was the opinion of those members of the Committee who visited the stations in autumn that they should be discontinued. I quite concur with them in that opinion. From many observations made in various parts of the country where experiments are being carried on in co-operation with the Highland Society, I am led to think that agricultural experiments should not be conducted on plots much less than 1-10 acre in extent, and I would recommend all who purpose experimenting this year to adopt, where possible, plots measuring 1-10 acre. In my report at this time last year I expressed the hope that farmers in various parts of the country might be found willing to experiment on their own fields so as to prove for themselves what were the requirements of their soils, and specially that agricultural associations might make such experimenting a part of their work. My appeal has been answered by several associations and by farmers in various parts of the country, and a beginning has now been made to what I hope will soon become a widespread organisation, which shall enable us to arrive at accurate knowledge regarding the efficacy of various manures in various soils, and in various situations far more rapidly and usefully than can be done by operating on one or two experimental stations. I expect that I shall have a considerable number of reports from various parts of the country sent in to me in time for publication in the *Transactions.*

ANALYTICAL ASSOCIATIONS.—The number of analytical associations who have this year applied for the Society's aid and co-operation is the same as last year, viz., 13. Three associations who sent in returns last year have not done so this year, from causes which I hope are only temporary, and three others have this year joined with the Society for the first time. One of these, unfortunately, owing to some irregularity of procedure which prevented the Society from giving it the support which its scheme affords, withdrew its application for this year, so that there remain twelve associations who this year claim the Society's grant. The number of analyses for which a grant is claimed is 207. Of that number five are disqualified for the want of a guarantee, leaving 202 whose claims are accepted. These consist of 190 full and 12 partial analyses. The sum to be paid by the Society to the associations on account of these analyses is £49. The numbers last year were 216 full and 5 partial analyses, and the grant amounted to £54, 10s. The falling off in the number of analyses obtaining the Society's grant is due to accidental and temporary causes. I have no doubt that next year there will be a considerable increase. The hard times through which agriculture has been passing has considerably diminished the number of buyers of artificial manures. If farmers were confident of being able to buy manures at a reasonable price, and if they knew exactly what were the most economical and efficacious manures to apply for the particular crops they were raising, and the special land they were cultivating, then I should regard a diminished use of artificial manures as one of the most serious signs of agricultural depression, for in very many cases it is in the judicious use of these that a profit is able to be obtained. But experience has taught farmers that much of the money they have expended on manures has not yielded a profit, but has only incurred a loss, and because they have no security against the recurrence of such a misfortune, they are afraid to risk their money in what seems a kind of speculation ; and a diminution of the manure bill, instead of being the last thing, becomes rather one of the first things to which the farmer looks when hard times compel him to curtail his expenditure. This is an unfortunate state of matters, and the only hope of a reformation lies in farmers taking advantage of the means at their disposal of making themselves better acquainted with the character of manures, the proper method of using them, and the price at which to buy them, so as to make them a profitable investment. By means of co-operation, farmers have it in their power to learn all that they wish to know regarding these things. If all agricultural societies throughout the country were to make it a part of their work to carry on experiments with manures, and to secure that the manures supplied to their district were of the kind that was most beneficial, and that the quality of these was up to the standard required, and that the price paid for them was fair and reasonable, one of the chief causes of agricultural distress would be greatly diminished. A careful examination of the reports sent in to the Society by analytical associations this season shows how great is the need of such a system of co-operation. In my report upon this subject last year, I showed that a very large amount of the money being expended upon manures might easily be saved. I have been repeatedly informed by farmers that they derived great benefit from reading that report, and I would recommend those who are about to buy manures, to read it before making their purchases. It is to be found in the last copy of the *Transactions*, Appendix A, page 30 ; and though it was written in reference to manures purchased through associations in 1881, yet I find that most of the general remarks contained in it may be applied to those purchased in 1882. I see a certain amount of improvement, which shows me that the advice contained in my report has not been disregarded, but there still exist many examples of inferior manures having been purchased, and very many more of manures bought at prices which are simply ruinous. I will not take up the time of this meeting with a detailed reference to these. A full report of the whole matter will be published in the *Transactions* this year, and I understand it is the intention of the Directors to publish there the details of a number of those unfortunate purchases, along with the names of the sellers. I would only make a few general remarks regarding the manures purchased through the analytical associations last year. There is an increase in the number of samples of bone meal, they are almost all of good quality, and, with two or three exceptions, sold at very reasonable prices—average price, £8. There is a decrease in the number of samples of dissolved bones; as a rule they are high priced. The average price is £7, and the average value by the Society's units is £6, 3s. per ton, cash at seaport. Some of these manures, going under the name of dissolved bones, fall far below their guarantees, and 20 per cent. overcharge is not uncommon. There is a slight increase in superphosphates. The high-class superphosphates, containing about 30 per cent. and upwards of soluble phosphate, average £4, 14s. per ton, and are good value. Low-class superphosphates, containing less than 25 per cent. soluble phosphate, average £4, 5s. per ton, and are dear at that price, their average value being £3, 4s. cash at seaport. Some superphosphates are grossly overcharged. There are few samples of Peruvian guano, and there is likely to be fewer this year. The price is quite prohibitive. Regarding compound manures, there is the same sad story to tell as there was last year. Happily the number of compounds bought are much fewer, viz., 25, as against 38 last year. Nearly the whole of them are sold at prices from £1 to £3 above their value. The unfortunate thing about compound manures is that there is no standard with which to compare them. Their composition and their prices vary very greatly, and it requires some exercise of judgment to determine their value. Their names are various, and some are very high sounding. There is something in the name, but unfortunately it is often something that is not in the mixture. A manure manufacturer can make a mixture better than a farmer, and perhaps cheaper, but so long as mixtures are sold at prices such as I have mentioned, farmers, unless they are shrewd buyers, should make their mixtures themselves. As to feeding stuffs, there is, of course, a falling off in the number of analyses, due to the abundance of "keep" in the country last year. They are nearly all good samples. First-class linseed cake sold south of the Grampians averaged fully £8, 10s. per ton, while second-rate linseed cake sold north of that limit averaged £10 per ton. In conclusion, I would say to farmers who are about to enter the manure market, —(1) see a sample of the stuff; (2) get a guaranteed analysis; (3) have nothing to do with the manure if the guarantee does not tell exactly what is the equivalent per cent. of soluble phosphate, insoluble phosphate, ammonia, potash, and in these precise words. If the guarantee is a proper one, find the value of the manure by multiplying the numbers given for each of the constituents by the corresponding unit values in the Society's scheme, and so obtain the cash price at seaport; (4) having bought a quantity of manure, weigh it while it is being delivered; (5) draw a sample according to the Society's printed instructions, and have it analysed; (6) if neighbouring farmers would combine and buy their manures in one large quantity, they would obtain easier terms, and one analysis would do for all; (7) buy only from respectable and responsible sellers, and avoid all highly puffed manures; (8) pay cash, if possible.

Mr. MYLNE, Niddrie Mains, gave in a report by the judges on the trial of sheaf-binders, which took place at Gladstone, near Bishopton, in August last.

THE POTATO DISEASE.—Mr. JAS. L. GUILD, Abbey Farm, North Berwick, then moved —"That, as the cultivation of the potato is rendered very precarious owing to the ravages of disease, and as it appears that the best mode of resisting it lies in the raising anl introducing new varieties, it be remitted to the Directors to encourage the same dy the giving of premiums or otherwise." In supporting his motion, Mr. Guild saib—The importance of the subject must be my apology for trespassing on your time, but I will endeavour to make my remarks as short as possible. Every one must be aware that the potato was first introduced into this country by Sir Walter Raleigh about the year 1580, and since that time has increased so much in cultivation that now no vegetable is more extensively grown and more indispensable as an article of food to both rich and poor. From the time of its introduction to the year 1845-46, the potato grew and flourished in almost perfect health, but in that year a dreadful calamity suddenly overtook it. It would be interesting to know what the meteorological conditions of that year were, so that we might try to account for the collapse which took place; but at any rate, it seemed as if a fiery vapour had passed over the land, for in a few days, what were to appearance healthy plants, were nothing but blackened shaws from one end of the country to the other; and so much dependence had come to be put on the plant in some quarters, especially in Ireland, that the result of its failure was disastrous, and an amount of famine and loss of life took place, which was, happily, unknown before from such a cause in the annals of the country. From that year to the present no season has been entirely free from blight, and for the last ten years, owing, I suppose, to the amount of moisture and other atmospheric causes, disease has been rife, and great loss has been sustained by farmers. I have heard and know of whole fields being actually ploughed up owing to the quantity of sound tubers being too limited to pay the cost of lifting. That the cultivation of the potato has raised the value of land is undeniable. In East Lothian alone I would estimate the rise from this cause at £2 an acre. Farmers have been growing potatoes on land which was never intended by nature to be used for that purpose, and the disease has been so bad on that class of soil, that their cultivation will have to be given up, and rents reduced to their old figure. To show the great importance of the potato cultivation, and the loss sustained by disease, I have made the following calculation. Of course my figures are open to criticism, but I do not think I am guilty of any exaggeration :—The total number of acres grown in the last ten years in Scotland, as given by the Board of Trade returns, is 1,682,627. I would estimate the average crop grown at 5 tons an acre, making 8,413,135 tons. Then the amount of disease per acre I would put at 20 per cent., or one-fifth, making a loss of 1,682,727, at, say,

£3 a ton, ...	£5,047,881
But from this I deduct 75 per cent., used for cattle feeding or other purpose, viz., 1,261,970 tons, at £1, ...	1,261,970
And leaving a total loss to farmers and the country of . . .	£3,785,911

If the whole of Great Britain be taken, the loss by a similar calculation is three times as great, being upwards of £10,000,000, or over £1,000,000 a year. I do not intend to take up the time of this meeting in speculating as to what is the origin or cause of the disease ; it is sufficient for my purpose that the enemy exists, and that to an alarming extent, but I believe there is now little doubt that it is a vegetable fungus which first attacks the leaves, and is the result of fermentation under certain conditions of the atmosphere. Now I am quite well aware that Commissions have sat, inquiries have been made, experiments have been tried to prevent or mitigate the plague, but hitherto without much success. While saying this, however, I must compliment Herr Jensen of Denmark on the energy he has shown on the subject ; but the result of the experiments which have been conducted with his plough this year in East Lothian have not, I am sure, been even to his own mind very satisfactory. Gentlemen, there is one way, and one only, by which the disease can be overcome, and that is raising new varieties ; and I trust that this meeting will show by their vote their sense of the importance of the subject. It has been proved beyond doubt by actual practice that the various sorts have a limited term of life. Where are all the old sorts which were cultivated twenty years ago ? The end has been the same in each case. They got too tender and liable to disease, and had to be given up. The once famous regent is now practically in disuse. Patterson's victoria will soon follow. But that is not the worst feature in the case. Fifteen or twenty years ago there was an endless number of varieties, now there are only five or six in general cultivation, and all these are more or less diseased this year. To crown all, I know of only two new varieties ready to take their place, and everything points to the need of a Society such as this stepping into the breach with substantial encouragement. I am sorry the Directors of this Society have seen fit to oppose my scheme. I have heard the argument used that it should be left to individual enterprise, there being plenty of payment in bringing out a new variety. Was there payment to the rearer of the victoria or the champion ? But even supposing there was, I deny that that removes the responsibility from this and kindred societies; that argument is utterly untenable. Why does this Society hold Shows and give large premiums to the best of the different classes of stock ? Is it not to encourage the rearing and breeding of that stock ? You might apply the same argument here and say that the rearer of the best stallion would receive enough payment without a premium given by this Society. If that is not correct, then there is no reason why the rearer of the best variety of new potato should not also obtain a premium. Is it not the object of this Society to encourage not one branch, but all branches of agriculture ? If that is so, then I leave my motion with confidence in the hands of this meeting. I consider that in times like these, when agriculture has received such a shock, that it is particularly the duty of a Society such as this to do everything in its power to foster and encourage farming in all its branches. This is not a political Society, and cannot assist in any way in the making of new land laws, which are much required ; and I make bold to say that it will stultify itself if it refuses this small modicum of help to agriculture which I propose.

Mr. **Gardiner**, Chapel Bank, seconded the motion.

Mr. **Scott Dudgeon** said there was no doubt that this was a subject of very great importance. He did not think that Mr. Guild had over-estimated the loss to the country through the potato disease, as in 1879 the loss to Ireland alone was £8,000,000. Mr. Guild was wrong in supposing that the Directors were opposed to his proposal. They only intimated that the funds of the Society were in such a condition that they did not feel themselves justified in proposing that any grant should be made towards this object. A select committee of the House of Commons sat on the subject of the potato disease in 1880, and in their finding they quite agreed with what Mr. Guild said that the only hope of repressing the disease, or obtaining a remedy towards a mitigation of the disease, was by the selection of new varieties of potatoes. At the same time the selection of new varieties did not offer much hope of remuneration. At the last meeting of the Directors at which the matter was brought up it was well considered, and they regretted that they had to send such an answer to Mr. Guild, because it was not the general opinion of the Directors that any single experimenter could be remunerated in introducing new varieties. The select committee in their report said it would seem that the search for new varieties must be undertaken by the potato growers working through the societies or by the Government, and that as little had been effected by the societies, it would seem to be for the Government to lend assistance. He thought they had got from the recommendation of the committee very strong arguments why they should go to the Government and ask them to take up the matter. He would move a resolution to the effect that this Society memorialise the Government on the subject, drawing attention to the report of the select committee of 1880 as to what had been done, that the recommendations of the committee be carried out, and a superintendent in Scotland be appointed, who should conduct the necessary experiments in connection with the introduction of successful disease-resisting kinds of potatoes. He thought that the meeting could not do better than adopt the resolution. Nothing, he might say, had been done by the committee for two years. It was like all matters connected with agriculture in this country—they were shelved. He had written to Mr. Barclay, M.P., a member of the select committee, and he had replied by telegram saying that the Government had done nothing, and there was no hope of their doing anything.

Mr. **Dingwall**, Ramornie, seconded Mr. Scott Dudgeon's motion.

Mr. **Dundas** of Arniston said he would remind them of what had been done in regard to this matter long ago. What was most relied upon in former times was the introduction of new varieties of potatoes, and the whole world was ransacked for them. An idea was that they should go back to the seed, and seed from its own country; and he recollected that importations of seed were made from South America, and great expectations were held out of the young plant being able to resist disease, but it turned out to be a delusion, and it was as liable to the disease as the others.

Mr. **Bethune** of Blebo said he had great doubts about sending the proposed memorial to Government. They might do so when a Minister of Agriculture was appointed. He confirmed Mr. Dundas's statements, and said that the potatoes were going to the bad for twenty years before the blight. He thought it was like a bit of humbug sending the proposal to Government; and that a little money would be well spent in the way Mr. Guild suggested, but they ought not to send a memorial to Government, for, as God knows, they had enough to do already.

Sir **James Gibson-Craig** said that in the premium-book it would be seen that the Society at present offered medals or sums of money not exceeding fifty sovereigns for new or improved varieties of roots.

Mr. **George Prentice**, Strathore, Burntisland, said he thought it quite right that such a premium as was proposed by Mr. Guild should be offered by the Society. It was all very well to have it in a general way in the premium-book, but the attention of specialists ought to be drawn to the state of the potato question. He did not think that the Directors could say that they had no funds for the purpose. No Society with such a capital at their back could say that they were poor.

After some remarks by Mr. **Sheriff** on the importance of the question before the meeting, a division took place, when Mr. Guild's motion was carried by a majority.

Ensilage.—Mr. **Mackenzie** of Portmore said that the first proposal brought before the Society on the subject of ensilage was that a paper should be produced and published in the *Transactions*; but it was thought that seeing the large amount of literature on the question already produced, and the numerous newspaper leaders and articles that had been written regarding it, it would be advisable, seeing the real value of the system, that the Society should make an experiment on a sufficiently large scale to test its applicability or otherwise to the soil, climate, and condition of Scottish farming. In accordance with that view, a Committee had been appointed, consisting of Mr. Dundas of Arniston, Mr. Mylne, the Secretary and Chemist of the Society, and himself, to carry out such an experiment, and they were already engaged in the preliminary work connected therewith. He hoped that at the meeting in June they would be able to report on the subject more fully. They expected that the experiment would be carried on practically free of cost to the Society.

The Hon. **George Waldegrave Leslie** asked what was the capacity of the silo?

Mr. **Mackenzie** said it would have a capacity of about 100 tons, sufficiently large for the experiment, and to try not one single fodder but several.

Agricultural Education.—Mr. **Milne** reported that the examination of candidates for the Society's bursaries took place on the 25th of October, when twelve students enrolled their names, and the following passed:—For bursaries of £20 each—John Bardgett, Stockbridge Mill, Penrith; A. H. Gibson, Kirkcaldy; and Robert Seton, Rampyards, Watten. For bursaries of £10 each—Alexander Johnstone, 21 St. Andrew Square, Edinburgh; and John Rosie, 20 Vansittart Street, Wick. He also announced that the next examinations for the Society's diploma and certificates in agriculture, and for the certificates in forestry, had been fixed to be held on the 26th, 27th, and 28th March—candidates being required to enter their names with the Secretary before the 19th March.

The report was adopted.

Louping-ill and Braxy.—Mr. **Eliott Lockhart** presented the second report of the Special Committee on Louping-ill and Braxy, which was to the effect that owing to the openness of the previous winter there had been less louping-ill than usual; that while it was not yet satisfactorily made out whether or not the tick was a necessary agent in the dissemination of the disease, there seemed abundant evidence to show that by getting rid of too rank and excessive vegetation, both the disease and ticks could be eradicated, making it clear that the remedies lay in improving hill pastures by means of burning, draining, top-dressing, giving plenty of salt, and putting on cattle along with sheep, &c. From want of cases, the Committee was unable to make any further report on braxy.

The report was adopted.

District Shows.—Mr. **Campbell Swinton** reported that during the past year money premiums and medals had been awarded in 270 districts to the amount of £760, and that the details of the various awards would be published in the *Transactions*, now in the printer's hands. For 1883 the Directors had to recommend for the approval of the meeting the following grants:—Three districts for cattle at £18 each, and five for three minor silver medals each; three districts for stallions at £25 each, and two at £15 each; six districts for mares at £7 each; seven districts for colts and fillies at £13 each; five districts for sheep at £12 each, and six for four minor silver medals each; one district for dairy produce at £6. A special grant of £20 to the Ayrshire Agricultural Association, to be competed for at Kilmarnock Dairy Produce Show; grants of £3 each to the Orkney, Rousay, and Unst Agricultural Societies; 160 minor silver medals to 47 societies. It had been agreed to add a rule to the effect that when a grant has expired, the district should not be entitled to apply again for aid for five in place of two years. The Board had also to recommend that the usual medal given at ploughing matches should be continued.

Mr. **Drew**, Merryton, said they were all aware of the importance of the Glasgow Society, and especially of the Stallion Show, which was second to no Show in the world. They had had a great deal to do to get it up to its present position; and he thought that the Highland Society ought to be proud of the Glasgow Stallion Show and the Glasgow Society. They were all aware that they had done a great deal of good to the Highland Society; and it was a matter of great regret to the directors last week that the Directors of the Highland Society could not continue the grant. The Highland Society had an income of £4500, which he thought was too much to be invested, especially in such times as the present. He hoped that the Directors would agree to continue the grant of £50 to the Society, and he moved accordingly. They had hitherto given the Highland Society a choice of a horse out of about 200. That had been a great advantage in past years, but the Society in the west had resolved that if the grant was not given, the Highland Society would not get the horse this year.

Mr. **Campbell Swinton** said that the Committee had received instructions from the Directors that the expenses generally should be reduced in respect of the losses they had sustained of late years. He might state that the Committee recommended that a grant of £25 should be given to the Glasgow Society and £25 to Edinburgh; but the Directors thought it better not to adopt the recommendation of the Committee. He was not there to say that the Directors had not done right. He did not think that this grand society in Glasgow stood so much in need of the grant as some of the smaller societies in other parts of the country. He moved that the report be approved of.

Mr. **Peter Brown** seconded Mr. Drew's motion.

Mr. **Villiers**, Closeburn Hall, seconded Mr. Campbell Swinton's motion. He said there was every probability of a loss at the Inverness Show, and he thought that instead of the Glasgow Society coming and begging for a grant they should assist the smaller societies.

Mr. **Young**, Glasgow, said that the Glasgow Society was not asking the £50 for nothing. He held that if the Highland Society went on losing money it must be by bad management, for the Glasgow Society was making a profit every year. It started a few years ago with £120, and now it had £1200.

Mr. **Sheriff** reminded Mr. Young that Glasgow was the second richest city in the kingdom.

Mr. **Bartlemore** supported Mr. Drew's motion. He said that the meeting should bear in mind what the Glasgow Society had done for the Clydesdale horse. They ought also to keep in view the large amounts which had been collected at the different Shows that had been held in Glasgow. At the Show held before the last one in Glasgow a sum of £6212 was realised, which was larger by £2000 than at any previous Show.

On a division, 20 voted for Mr. Drew's motion, and 25 for Mr. Campbell Swinton's motion.

COTTAGE COMPETITIONS.—Mr. CAMPBELL SWINTON reported that the premiums for the best kept cottages and gardens had been competed for during the past year in thirty-five districts, and that money prizes and medals had been awarded to the amount of £88. For the current year the Directors recommended the following grants :—Sixteen parishes or districts at £3 each ; and twenty-four associations at two minor silver medals each. Although there had been no competition for several years for the gold medals offered for building new and improving existing cottages, the Directors recommended that these should be continued. The conditions attached to the offer are fully detailed in the Society's premium-book for 1883.

ESSAYS AND REPORTS 1882-83—TRANSACTIONS 1883.—Mr. IRVINE of Drum reported the premiums awarded for reports in 1882 and those offered in 1883, and the contents of the forthcoming volume of the *Transactions.*

On the motion of Mr. BETHUNE of Blebo, a vote of thanks was given to the Chairman, and the proceedings terminated.

PREMIUMS AWARDED BY THE SOCIETY IN 1882–83.

I.—REPORTS, 1883.

AGRICULTURAL.

1. Alexander Macdonald, Courant Office, Elgin, for a Report on the Agriculture of the Counties of Elgin and Nairn, ...	£30	0	0
2. James Tait, 26 Windsor Street, Edinburgh, for a Report on the Agriculture of the Counties of Clackmannan and Kinross, ...	10	0	0
3. David Robie, Lansdowne Terrace, Bedford, for a Report on the Utilisation of Town Sewage, ...	10	0	0
4. Patrick R. Latham, Tweed Terrace, Bridge of Allan, for a Report on the Deterioration of Hill Pasture, ...	5	0	0
5. Andrew Slater, Wyreside Cottage, Lancaster, for a Report on Haymaking, .	5	0	0
6. W. Anderson Smith, Ledaig, Oban, for a Report on Marine Highland Industries.	5	0	0
7. John Caverhill, Greenburn, Reston, for a Report on Stored and Unstored Turnips,	3	0	0
8. David Watson Wemyss of Newton Bank, St Andrews, for a Report on the Cultivation of the Potato, ... Silver Medal.	0	16	0

FORESTRY.

9. Robert Hutchison of Carlowrie, Kirkliston, for a Report on the Silver Fir, .	5	0	0
10. David Watson Wemyss of Newton Bank, St Andrews, for a Report on Preparing Wood for Fencing, ... Minor Gold Medal,	3	15	0
	£77	11	0

II.—GLASGOW SHOW, 1882.

CLASS I.—CATTLE.

SHORTHORN.

SECTION 1. BULLS calved before 1st January 1880.

1. James A. Gordon, Udale, Invergordon, "Rosario 2d" (42,299), . . .	25	0	0
2. Sir Thomas Buchan Hepburn, of Smeaton Hepburn, Bart., Prestonkirk, "Smeaton Hero" (42,419), ...	15	0	0
3. A. & A Mitchell, Alloa, "Colonel" (42,948), ...	10	0	0
Breeder of Best Bull—James A. Gordon, Udale, Invergordon, . Silver Medal,	0	16	0
V. H. C., John Balfour of Balbirnie, Markinch, "Forthside."			

SECTION 2. BULLS calved on or after 1st January 1880.

1. James Shields, Byres, Bathgate, "Cyprus 2d,"	25	0	0
2. James Durno, Jackstown, Rothie Norman, "Claymore," . . .	15	0	0
3. Adam L. Cochrane of Sunnyside, Melrose, "Sunnyside Carlos," . .	10	0	0
H. C., A. & A. Mitchell, Alloa, "Standard Bearer" (45,650).			

SECTION 3. BULLS calved on or after 1st January 1881.

1. James Watt, Garbity, Fochabers, "Jardine,"	15	0	0
2. James M'William, Stoneytown, Keith, "Sir Thomas,"	10	0	0
3. James Bruce, Burnside, Fochabers, "Red Knight,"	5	0	0
H. C., James Bruce, Burnside, Fochabers, "Othello." C., Evan Baillie, of Dochfour, Inverness, "Wizard o' the North."			

SECTION 4. COWS of any age.

1. Evan Baillie, of Dochfour, Inverness, "Sweetpea,"	20	0	0
2. W. A. Mitchell, Auchnagathle, Whitehouse, Aberdeen, "Hawthorn Bud," .	10	0	0
3. Evan Baillie, of Dochfour, Inverness, "Belle of Albion,"	5	0	0
H. C., James A. Gordon, Udale, Invergordon, "Beeswing." C., John Allan, Crieffvechter, Crieff, "Lady Superior."			
Carry forward.	£165	16	0

Brought forward,	£165	16	0

SECTION 5. HEIFERS calved on or after 1st January 1880.

1. The Duke of Buccleuch and Queensberry, K.G., Dalkeith Park, Dalkeith, "Rose of Dalkeith,"	15	0	0
2. William A. Mitchell, Auchnagathle, Whitehouse, Aberdeen, "Aurora,"	10	0	0
3. James M'William, Stoneytown, Keith, "Golden Wreath,"	5	0	0
H. C., George Bruce, Seedsman, Aberdeen, "Emma 2d." C., James Russell, of Dundas Castle, South Queensferry, "Rosalie."			

SECTION 6. HEIFERS calved on or after 1st January 1881.

1. James Watt, Garbity, Fochabers, "Wild Rose,"	10	0	0
2. The Duke of Buccleuch and Queensberry, K.G., Dalkeith Park, Dalkeith, "Cocotina,"	8	0	0
3. James Bruce, Burnside, Fochabers. "Florentia 6th,"	4	0	0
V. H. C., The Duke of Buccleuch and Queensberry, K.G , Dalkeith Park, Dalkeith, "Cherry Vale."			

AYRSHIRE.

SECTION 7. BULLS calved before 1st January 1880.

1. Andrew Hoggan, jun., Busby Farms, Busby, Lanarkshire, "Pretender" (191),	20	0	0
2. Alexander Craig, Over Milton, East Kilbride, "Duncan,"	10	0	0
3. Sir Michael R. Shaw Stewart, of Greenock and Blackhall, Bart, Ardgowan, Greenock, "Lord Raglan" (289),	5	0	0
Breeder of Best Bull—Adam Young, High Gooseloan, Kilwinning, . Silver Medal,	0	16	0
V. H. C., The Duke of Buccleuch and Queensberry, K.G , Drumlanrig, Thornhill, "Ayrshire Lad," H. C., D. C. Willison, Dalpeddar, Sanquhar, "Lord Raglan." C., T. D. C. Graham, of Dunlop House, Stewarton, "Fenwick Laddie" (142).			

SECTION 8. BULLS calved on or after 1st January 1880.

1. Robert Wardrop, Garlaff, Cumnock, "King Coil" (431),	20	0	0
2. The Duke of Buccleuch and Queensberry, K.G., Drumlanrig, Thornhill, "The Star of Drumlanrig" (247),	10	0	0
3. Robert M'Kean, Lumloch, Bishopbriggs, "Young Baron,"	5	0	0
V. H. C., John Meikle, Grougfoot, Linlithgow, "Bismarck," H. C., Wm. A. M'Lauchlan, of Auchentroig, Balfron, "Wattie." C., John Craig, of Bellsfield, Blantyre, "Colia."			

SECTION 9. BULLS calved on or after 1st January 1881.

1. The Duke of Buccleuch and Queensberry, K.G , Drumlanrig, Thornhill, "Macgregor,"	10	0	0
2. Andrew Hoggan, jun., Busby Farms, Busby, Lanarkshire, "Baron of Over Milton" (351),	5	0	0
3. John Hamilton, Bogside, Stonehouse, "La Di Da,"	3	0	0
V. H. C., William Young, Waterbank, Carmunnock, Lanark, "Butterfly." H. C, Robert Montgomerie, Lessnessock, Ochiltree, "Earl Dumfries" (412). C., John M. Martin, Auchendennan Farm, Balloch, "Quicklime."			

SECTION 10. COWS in Milk, calved before 1st January 1879.

1. Gabriel Dunlop, Castle Farm, Stewarton,	20	0	0
2. Andrew Hoggan, jun , Busby Farms, Busby, "Cartleburn of Busby,"	10	0	0
3. The Duke of Buccleuch and Queensberry, K.G., Drumlanrig,	5	0	0
V. H. C, John Lindsay, Thornhill, Stewarton, "Jean." H. C., The Duke of Buccleuch and Queensberry, K G , "Maggie 7th of Drumlanrig" (704). C., John Holm, Japston, Neilston, "Stewarton" (1306).			

SECTION 11. COWS in Milk, calved on and after 1st January 1879.

1. William Weir, Inches, Larbert, "Maggie,"	20	0	0
2. Robert Wilson, Manswraes, Kilbarchan,	10	0	0
3. William Lawrie, Tweedieside, Stonehouse, "Dandy,"	5	0	0
H. C., The Duke of Buccleuch and Queensberry, K G., "White Rose 2d of Drumlanrig" (860). C., James Duncan, Home Farm, Benmore, Kilmun, Greenock, "Maud."			
Carry forward,	£376	12	0

Brought forward,	£376	12	0

SECTION 12. COWS in Milk or in Calf, of any age, bred by the Exhibitor.

1. John M'Kean, Ballewan, Strathblane, "Flora,"	20	0	0
2. The Duke of Buccleuch and Queensberry, K.G., "Dainty 2d of Drumlanrig" (646),	10	0	0
3. The Duke of Buccleuch and Queensberry, K.G , "Ruby 3d of Drumlanrig" (880),	5	0	0
H. C., The Duke of Buccleuch and Queensberry, K.G., "Louise 3d of Drumlanrig" (876). C., John Holm, Japston, Neilston.			

SECTION 13. COWS in Calf, calved before 1st January 1879.

1. John Brown, Brownville, Kilsyth, "Isabella,"	15	0	0
2. The Duke of Buccleuch and Queensberry, K.G , "Delight of Drumlanrig" (651),	10	0	0
3. The Duke of Buccleuch and Queensberry, K.G., "Woolfords of Drumlanrig" (851),	5	0	0
V. H. C., W. A. Maclachlan, of Auchentroig, Balfron, "Maggie." H. C., James Finlay, East Kilbride, "Flower of Kilbride." C., The Duke of Buccleuch and Queensberry, K.G., "Adela of Drumlanrig" (618).			

SECTION 14. HEIFERS in Calf, calved on or after 1st January 1879.

1. John Meikle, Grougfoot, Linlithgow, "Princess,"	12	0	0
2. The Duke of Buccleuch and Queensberry, K G., "Alice of Drumlanrig,"	8	0	0
3. John Craig, of Bellsfield, Blantyre, "Spotty,"	4	0	0
V. H. C., James Scott, Newlands, Bothwell, Bargeddie, "Spotty," H. C., John Holm, Japston, Neilston. C., James A. Hamilton of Whiteshawgate, Strathaven, "Jane."			

SECTION 15. HEIFERS calved on or after 1st January 1880.

1. Robert Wardrop, Garlaff, Cumnock, "Snowflake,"	10	0	0
2. John Meikle, Grougfoot, Linlithgow, "Queen,"	6	0	0
3. Andrew Hoggan, jun., Busby Farms, Busby, "Westburn of Busby,"	4	0	0
V. H. C., Robert Wardrop, Garlaff, Cumnock, "Ayrshire Lassie." H.C., James Wilson, Boghall, Houston, "Reid." C., John Holm, Japston, Neilston.			

SECTION 16. HEIFERS calved on or after 1st January 1881.

1. The Duke of Buccleuch and Queensberry, K.G., "Evelyn 2d of Drumlanrig" (1153).	8	0	0
2. Andrew Hoggan, jun., Busby Farms, Busby,	5	0	0
3 Robert Wardrop, Garlaff, Cumnock,	3	0	0
V. H. C., John Craig, of Bellsfield, Blantyre, "Kate." H. C., The Duke of Buccleuch and Queensberry," K.G., "Eva 2d of Drumlanrig" (1152). C., William Hunter, Craighead, Abington, "Lady Elizabeth."			

POLLED ANGUS OR ABERDEEN.

SECTION 17. BULLS calved before 1st December 1879.

1. Thomas Ferguson, Kinnochtry, Coupar-Angus, "Prince of the Realm" (1695),	20	0	0
2. R. C. Auld, Bridgend, Alford, Aberdeen, "Knight of the Shire" (1699),	10	0	0
3. John Strachan, Mains of Montcoffer, Banff, "Editor" (1460),	5	0	0
Breeder of Best Bull—Thomas Ferguson, Kinochtry, Coupar-Angus. Silver Medal,	0	16	0
V. H. C., The Earl of Strathmore, Glamis Castle, Forfar, "Khan" (1262). H. C., George Wilken, Waterside, of Forbes, Alford, "Black Standard" (1541).			

SECTION 18. BULLS calved on or after 1st December 1879.

1. R. O. Farquharson, of Haughton, Alford, Aberdeenshire, "The Black Knight" (1809),	20	0	0
2. The Earl of Strathmore, Glamis Castle, Glamis, Forfar, "Bismarck 2d" (1860),	10	0	0
3. Lieut.-Col. George Arthur Ferguson of Pitfour, Mintlaw, "Lord Maurice" (1881),	5	0	0
V. H. C., Sir George Macpherson Grant, Bart., M.P., The Castle, Ballindalloch, "Julius" (1819). H. C., James Petrie, Glencorrie, Dufftown, "King James" (1877).			

Carry forward,	£572	8	0

Brought forward,	£572	8	0

SECTION 19. BULLS calved on or after 1st December 1880.

1. George Reid, Little Clinterty, Blackburn, Aberdeen, "Lord Chancellor" (1782),	10	0	0
2. Sir George Macpherson Grant, Bart., M.P., The Castle, Ballindalloch, "Sir Evelyn,"	5	0	0
3. John Hannay, Gavenwood, Banff, "Sir Idris,"	3	0	0

V. H. C., Her Majesty the Queen, Abergeldie Mains, Ballater, "Young Prince Albert." H. C., R. C. Auld, Bridgend, Alford, Aberdeenshire, "Puck." C., The Earl of Airlie, Cortachy Castle, Kirriemuir, "Economy."

SECTION 20. COWS of any age.

1. The Earl of Airlie, Cortachy Castle, Kirriemuir, "Miranda" (4204),	15	0	0
2. Sir George Macpherson Grant, Bart., M.P., The Castle, Ballindalloch, "Sprite" (3796),	8	0	0
3. Sir George Macpherson Grant, Bart, M.P., The Castle, Ballindalloch, "Juno" (3374),	4	0	0

V. H. C., W. M'Combie of Easter Skene, Skene, Aberdeenshire, "Penelope" (4022).

SECTION 21. HEIFERS calved on or after 1st December 1879.

1. The Earl of Strathmore, Glamis Castle, Forfar, "Sibyl 4th" (4326),	10	0	0
2. The Earl of Southesk, K.T., Kinnaird Castle, Brechin, "Essence" (4547),	6	0	0
3 William James Tayler, Rothiemay House, Huntly, "Lily of the Nile" (4576),	4	0	0

V. H C., W. M'Combie of Easter Skene, Skene, Aberdeenshire, "Highland Mary." H. C., Her Majesty the Queen, Abergeldie Mains, Ballater, "Pride of Aberdeen 24th." C., Alexander Mann, Ballintomb, Grantown, "Adelina Patti" (4649).

SECTION 22. HEIFERS calved on or after 1st December 1880.

1. The Earl of Airlie, Cortachy Castle, Kirriemuir, "Drusilla,"	8	0	0
2. The Earl of Airlie, Cortachy Castle, Kirriemuir, "Prudence,"	5	0	0
3. George Wilken, Waterside of Forbes, Alford, Aberdeenshire, "Lady Douglas,"	3	0	0

V. H. C., W. M'Combie of Easter Skene, Skene, Aberdeenshire, "Alexandra." H. C., George Reid, Baads, Peterculter, Aberdeen, "Isle of Beauty." C., John Hannay, Gavenwood, Banff, "Pride of Aberdeen 26th."

GALLOWAY.

SECTION 23. BULLS calved before 1st January 1880.

1. James Cunningham, Tarbreoch, Dalbeattie, "Harden" (1151),	20	0	0
2. The Duke of Buccleuch and Queensberry, K G., Drumlanrig, "Harden 2d" (1458),	10	0	0
3. John Graham of Shaw, Lockerbie, "John Highlandman" (1531),	5	0	0
Breeder of Best Bull—James Graham, Becklands, Carlisle, Silver Medal,	0	16	0

V. H. C., F. E. Villiers, Closeburn Hall, Thornhill, "Prince Victor" (1569). H. C., The Duke of Buccleuch and Queensberry, K.G., "Chancellor 2d of Drumlanrig" (1163).

SECTION 24. BULLS calved on or after 1st January 1880.

1. Robert Jardine of Lanrick Castle, M.P., Doune, "Premier of Castlemilk" (1642),	20	0	0
2. Maxwell Clark, Culmain, Crocketford, "Competitor" (1784),	10	0	0
3. The Duke of Buccleuch and Queensberry, K.G., Drumlanrig, "Eskdaill" (1559),	5	0	0

SECTION 25. BULLS calved after 1st January 1881.

1. J. Jardine Paterson of Balgray, Lockerbie, "Independence" (1695),	10	0	0
2. Alex. M'Cowan, of Newtonairds, Dumfries, "Stanley 2d of Drumlanrig" (1675),	5	0	0
3. Robert Jardine of Castlemilk, M.P., Lockerbie, "Rosebery of Castlemilk" (1679),	3	0	0

V. H. C., The Duke of Buccleuch and Queensberry, K.G., "Statesman of Drumlanrig" (1674).

SECTION 26. COWS of any age.

1. The Duke of Buccleuch and Queensberry, K.G., "Helena of Drumlanrig" (3412),	15	0	0
2. Robert Jardine of Castlemilk, M.P., Lockerbie, "Jenny Duke" (3842),	8	0	0
3. The Duke of Buccleuch and Queensberry, K.G., "Alice 3d of Drumlanrig" (2986),	4	0	0

V. H. C., F. E. Villiers, Closeburn Hall, Thornhill, "Forest Queen 5th" (3040). H. C., The Duke of Buccleuch and Queensberry, K.G, "Bessie 2d of Drumlanrig" (3411). C., J. Jardine Paterson of Balgray, Lockerbie, "Rosebud of Balgray" (3971).

Carry forward,	£769	4	0

		£	s.	d.
	Brought forward,	£769	4	0

SECTION 27. HEIFERS calved on or after 1st January 1880.

1.	Alexander M'Cowan, of Newtonairds, Dumfries, "Nundina 3d of Drumlanrig" (3822),	10	0	0
2.	Robert Jardine of Castlemilk, M.P., Lockerbie, "Lady Nancy 2d" (3981),	6	0	0
3.	James Cunningham, Tarbreoch, Dalbeattie, "Moss Rose 5th of Wedholme" (3950),	4	0	0
V.	H. C., James Cunningham, Tarbreoch, Dalbeattie, "Caroline of Tarbreoch." H C., J. Jardine Paterson of Balgray, Lockerbie, "Hannah of Balgray" (4183). C., Frederick E. Villiers, Closeburn Hall, Thornhill, "Sally of Closeburn" (3806).			

SECTION 28. HEIFERS calved on or after 1st January 1881.

1.	Robert Jardine of Castlemilk, M.P., Lockerbie, "Lady Soncy of Castlemilk" (4055),	8	0	0
2.	J. Jardine Paterson of Balgray, Lockerbie, "Mary Ann 2d of Balgray" (4084),	5	0	0
3.	The Duke of Buccleuch and Queensberry, K.G., "Hebe 2d of Drumlanrig" (4011),	3	0	0
V.	H. C., Robert Jardine of Castlemilk, M.P., Lockerbie, "Mary of Castlemilk." H C., J. & S. Nivison, Lairdlaugh, Dalbeattie, "Rosie" (4103). C., J. & S. Nivison, Lairdlaugh, Dalbeattie. "Fancy" (4102).			

HIGHLAND.

SECTION 29. BULLS calved before 1st January 1879.

1.	A. Dunlop Anderson, of Ardsheal, Ballachulish, "Rob Roy,"	20	0	0
2.	The Earl of Breadalbane, Taymouth Castle, Aberfeldy, "Fingal,"	10	0	0
3	The Duke of Athole, K.T., Blair Castle, Blair Athole, "Oscar 2d,"	5	0	0
V.	H. C., Alexander Macdonald, Balranald, Lochmaddy, "Roderick Dubh 2d." H. C., John Mackintosh, South Kinrara, Aviemore, "Ossian." C., George Robb, 11 Germiston Street, Glasgow.			

SECTION 30. BULLS calved on or after 1st January 1879.

1	Alexander Macdonald, Balranald, Lochmaddy, "Raahl,"	20	0	0
2.	The Earl of Breadalbane, Taymouth Castle, Aberfeldy, "Myrtle,"	10	0	0
3.	Alexander M'Donald, Nether Largie, Lochgilphead, "Balach-na-Buaile,"	5	0	0
V.	H. C., George A. Cox of Invertrossachs, Callander, "Rob Ruadh."			

SECTION 31. BULLS calved on or after 1st January 1880.

1.	John Stewart, Bochastle, Callander, "Baran Buidhe,"	10	0	0
2.	David Carnegie, of Stronvar, Lochearnhead,	5	0	0
3	Duncan Stewart, Mollan, Callander, "Gille Dubhe,"	3	0	0
V.	H. C., Alexander M'Donald, Nether Largie, Lochgilphead, "Ossian Buidhe." H. C., The Earl of Seafield, Castle Grant, Grantown, "Fear-a-Bhaile." C., The Earl of Seafield, Castle Grant, Grantown, "Charley."			

SECTION 32. COWS of any age.

1.	John Stewart, Bochastle, Callander, "Proiseag Dhubh,"	15	0	0
2.	John Stewart, Bochastle, Callander, "Chaisin Bhuidhe."	8	0	0
3.	George Willison, Ardlarach House, Luing, Easdale, Oban, "Cladvale,"	4	0	0
V.	H. C., Colonel Greenhill Gardyne, of Glenforsa, Aros, "Ban-a-Mhuillach." H. C., James Duncan, Home Farm, Benmore, Kilmun, Greenock, "Nanny." C., Alexander M'Donald, Nether Largie, Lochgilphead, "Ribhine Riabhach."			

SECTION 33. HEIFERS calved on or after 1st January 1879.

1.	John Stewart, Bochastle, Callander, "Annag Bhuidhe,"	10	0	0
2	The Earl of Breadalbane, Taymouth Castle, Aberfeldy, "Maggie 3d,"	6	0	0
3.	Alexander S. Finlay, of Castle Toward, Greenock, "Dubh Chruin,"	4	0	0
V.	H. C., James Duncan, Home Farm, Benmore, Kilmun, "May Queen." H. C, Lord Kinnaird, Rossie Priory, Inchture, "Mairi Malamhin." C., John Campbell, of Kilberry, Kilberry, "Jura."			

SECTION 34. HEIFERS calved on or after 1st January 1880.

1.	James Duncan, Home Farm, Benmore, Kilmun, Greenock, "Maighdean Bhan,"	8	0	0
2.	John Stewart, Bochastle, Callander, "Maighdean,"	5	0	0
3.	James Duncan, Home Farm, Benmore, Kilmun, Greenock, "Proisaig 4th,"	3	0	0
V.	H. C., The Earl of Seafield, Castle Grant, Grantown, "Bynack." H. C., The Earl of Breadalbane, Taymouth Castle, Aberfeldy, "Jessie 3d." C., Lord Kinnaird, Rossie Priory, Inchture, "Cairie-nan-Gleann."			
	Carry forward,	£956	4	0

Brought forward,	£956	4	0

FAT STOCK.

SECTION 35. HIGHLAND OXEN calved before 1st January 1879.

1. C. S. Home-Drummond Moray of Blair Drummond, Stirling, "Donald,"	6	0	0
2. Earl of Seafield, Castle Grant, Grantown, "Geordie,"	3	0	0

SECTION 36. HIGHLAND OXEN calved on or after 1st January 1879.

1. C. S. Home-Drummond Moray of Blair Drummond, Stirling,	5	0	0
2. C. S. Home-Drummond Moray of Blair Drummond, Stirling,	2	0	0
H. C., Peter Carmichael, Macharie, Port Ellen, Islay.			

SECTION 37. POLLED OXEN calved before 1st January 1880.—No Entry.

SECTION 38. POLLED OXEN calved on or after 1st January 1880.

1. R. C. Auld, Bridgend, Alford, Aberdeenshire,	5	0	0

SECTION 39. OXEN of any other Pure or Cross Breed calved before 1st January 1880.

1. Mrs. Phœbe Dunbar Dunbar, Kinloss Farm, Forres,	6	0	0
2. David M'Gibbon, Ard-na-Craig, Campbeltown,	3	0	0

SECTION 40. OXEN of any other Pure or Cross Breed calved on or after 1st January 1880.

1. Mrs. Phœbe Dunbar Dunbar, Kinloss Farm, Forres,	5	0	0
2 James M'Nab, Glenochil House, Menstrie,	2	0	0
C. George Robb, 11 Germiston Street, Glasgow.			

SECTION 41. CROSS-BRED HEIFERS calved before 1st January 1880.—No Entry.

SECTION 42. CROSS-BRED HEIFERS, calved on or after 1st January 1880.

1. James Durno, Jackstown, Rothie Norman, Aberdeenshire,	5	0	0
2. Thomas Hamilton, Poniel, Douglas, Lanark,	2	0	0

EXTRA CATTLE.

Very Highly Commended.

Ayrshire Bull, "Baron of Buchlyvie," winner of 1st prize at Stirling 1881, Wm. Bartlemore, Netherhouse, Paisley,		5	0	0
Highland Cow, "Phroiseag 2d," winner of 1st prize at Perth 1879, James Duncan, Home Farm, Benmore, Kilmun,	Medium Gold Medal,	6	2	0
Highland Cow, "Dulnain," winner of 1st prize at Kelso 1880, The Earl of Seafield, Castle Grant,	Medium Gold Medal,	6	2	0
Highland Heifer, 5 years old, David M'Gibbon, Ard-na-Craig, Campbeltown,		5	0	0
		£1022	8	0

CLASS II.—HORSES.

FOR AGRICULTURAL PURPOSES.

STALLION TO TRAVEL THE DISTRICT OF THE GLASGOW SHOW IN SEASON 1882.

David Riddell, Blackhall, Paisley, "St Lawrence,"	£100	0	0

SECTION 1. STALLIONS foaled before 1st January 1879.

1. Andrew Montgomery, Boreland, Castle Douglas, "The Macgregor" (1487),		30	0	0
2. Andrew Montgomery, Boreland, Castle Douglas, "Corsewall" (1420),		20	0	0
3. David Riddell, Blackhall, Paisley, "St Lawrence,"		10	0	0
4. T. N. M'Dowall, Auchtralure, Stranraer, "Belted Knight" (1395),		5	0	0
Breeder of Best Stallion—Robert Craig, Flashwood, Dalry,	Silver Medal,	0	16	0

V. H. C., Sir Michael R. Shaw Stewart, Bart., Ardgowan, Greenock, "Top-Gallant" (1850). H. C., Peter Ferguson, Rock Cottage, Renfrew, "Strathleven" (1539). C., James M'Nab, Glenochil House, Menstrie, "Cadder Chief" (1601).

Carry forward,	£165	16	0

Brought forward, £165 16 0

SECTION 2. ENTIRE COLTS foaled on or after 1st January 1879.

1.	William Wyllie, Princes Street Cottage, Perth, "Fitz-Lyon" (1656),	20	0	0
2.	Andrew Montgomery, Boreland, Castle Douglas, "Manfred" (1758),	15	0	0
3.	William Wyllie, Princes Street Cottage, Perth, "British Lion,"	10	0	0
4.	Peter Crawford, Burnfoot, Strathblane, "Lord Erskine" (1744),	5	0	0
V.	H. C., David Riddell, Blackhall, Paisley, "Jacob Wilson." H. C., Peter Crawford, Burnfoot, Strathblane, "Charmer." C., Matthew Gilmour, Town of Inchinnan, Paisley, "Sunbeam" (1834).			

SECTION 3. ENTIRE COLTS foaled on or after 1st January 1880.

1.	Lawrence Drew, Merryton, Hamilton,	15	0	0
2.	David Riddell, Blackhall, Paisley,	8	0	0
3.	James Johnston, Lochburnie, Maryhill, "Master Lyon,"	4	0	0
4.	Peter Crawford, Burnfoot, Strathblane, "Causewayend,"	2	0	0
V.	H. C., Andrew Smart, Lower Carglour, Stirling, "Barnton." H. C., John Macdonald, Porterfield, Renfrew, "Laird of Boturich." C., John Macdonald, Porterfield, Renfrew, "Lowland Lad."			

SECTION 4. ENTIRE COLTS foaled on or after 1st January 1881.

1.	James Kilpatrick, Craigie Mains, Craigie, "Knight of Snowdoun,"	10	0	0
2.	John Thow, Balhall, Brechin, "Wakeel,"	6	0	0
3.	Thomas Lindsay, Townend, Craigie, "King of the Campbells,"	4	0	0
4.	The Earl of Strathmore, Glamis Castle, Forfar, "Morning Star."	2	0	0
V.	H. C., James Johnston, Lochburnie, Maryhill, "Remember Me." H. C., Alexander Rankin, Aird, Stranraer, "The King." C., John M'Cubbing, Drum, Beeswing, Dumfries, "Pride of Avon."			

SECTION 5. MARES (with Foal at foot) foaled before 1st January 1879.

1.	Lawrence Drew, Merryton, Hamilton, "Queen,"	25	0	0
2.	Sir Michael R. Shaw Stewart, Bart., Ardgowan, Greenock, "Pansy,"	15	0	0
3.	Alexander Baird of Urie, Stonehaven, "Bonnie Jean,"	10	0	0
4.	T. N. M'Dowall, Auchtralure, "May Belle,"	5	0	0
V.	H. C., Andrew Montgomery, Boreland, Castle Douglas, "Bess." H. C., James Hunter, Coplawhill, Glasgow, "Jeanie" (791). C., David Riddell, Blackhall, Paisley, "Nell."			

SECTION 6. MARES (in Foal) foaled before 1st January 1879.

1.	John Waddell of Inch, Bathgate, "Louisa,"	20	0	0
2.	David Riddell, Blackhall, Paisley,	10	0	0
3.	John Dykes, Kipps Farm, Coatbridge, "Susy,"	5	0	0
4.	Robert Murdoch, West Hallside, Newton, "Adela,"	3	0	0
V.	H. C., Allan Kirkwood, Killermont Cottage, Maryhill, "Flora." H. C., David Cross of Knockdon, Maybole, "Young Hawkie." C., John Waddell of Inch, Bathgate, "Cherry."			

SECTION 7. FILLIES foaled on or after 1st January 1879.

1.	James F. Murdoch, East Hallside, Newton, "Rosie,"	15	0	0
2.	James M'Queen, Crofts, Dalbeattie, "Cherry Ripe,"	8	0	0
3.	Thomas Kerr, Whitehill, Sanquhar, "Mysie,"	4	0	0
4.	The Earl of Strathmore, Glamis Castle, Glamis, "Eva of Glamis,"	2	0	0
V.	H. C., James Watt, Garbity, Fochabers, "Nelly." H. C., Robert Wilson, Manswraes, Kilbarchan, "Nancy." C., John Wilson, South Bantaskine, Falkirk, "Eva."			

SECTION 8. FILLIES foaled on or after 1st January 1880.

1.	John Pollock, Greenlaw, Newton Mearns, "Queen of Quality,"	10	0	0
2.	John Waddell of Inch, Bathgate, "May Dew."	5	0	0
3.	Alexander Baird of Urie, Stonehaven, "Nazli,"	3	0	0
4.	David Riddell, Blackhall, Paisley,	2	0	0
V.	H. C., John Ralston, Millmain, Stranraer, "Lady Jane." H. C., The Earl of Strathmore, Glamis Castle, Forfar, "Dandelion." C., James Johnston, Lochburnie, Maryhill, "Mayflower."			

Carry forward, £408 16 0

Brought forward,	£408	16	

SECTION 9. FILLIES foaled on or after 1st January 1881.

1. William Montgomery, Banks, Kirkcudbright,	8	0	0
2. Andrew Montgomery, Boreland, Castle Douglas, "Young Rosebud,"	4	0	0
3. Lawrence Drew, Merryton, Hamilton,	2	0	0
4. John Waddell of Inch, Bathgate,	1	0	0

V. H. C., Thomas Lindsay, Townend, Craigie, "Queen." H. C., John Marr, Cairnbrogie, Old Meldrum, "Darling 3d." C., Thomas Lindsay, Townend, Craigie, "Beatrice."

SECTION 10. FAMILY PRIZE. The Family to consist of 5 Animals, foaled before 1st January 1880 (male or female, the offspring of one sire), not necessarily the property of one person.

1. David Riddell, Blackhall, Paisley, sire, "Darnley" (222),	20	0	0
2. Lawrence Drew, Merryton, Hamilton, sire, "Prince of Wales" (673),	15	0	0
3. John M'Master, Culhorn Mains, Stranraer, sire, "Lord Lyon" (489),	10	0	0

SECTION 11. FAMILY PRIZE. The Family to consist of 5 Animals, foaled on or after 1st January 1880 (male or female, the offspring of one sire), not necessarily the property of one person.

1. John M'Master, Culhorn Mains, Stranraer, sire, "Lord Lyon" (489),	20	0	0
2. Lawrence Drew, Merryton, Hamilton, sire, "Prince of Wales" (673),	15	0	0
3. David Riddell, Blackhall, Paisley, sire, "Darnley" (222),	10	0	0

SECTION 12. DRAUGHT GELDINGS, foaled before 1st January 1879.

1. Colin Campbell, 82 John Street, Bridgeton, Glasgow, "Farmer,"	8	0	0
2. John Wallace, Stonelaw, Rutherglen, "Prince,"	4	0	0
3. Colin Campbell, 82 John Street, Bridgeton, Glasgow, "Prince,"	2	0	0

V. H. C., R. Sinclair Scott, Greenock Foundry, Greenock, "Christopher."

SECTION 13. DRAUGHT GELDINGS, foaled on or after 1st January 1879.

1. David Cross, Ingliston, Bishopton, "Humbie,"	6	0	0
2. James M'Call, Veterinary College, Glasgow, "Old Times,"	3	0	0
3. The Duke of Argyll, K.T., Ballymenach, Campbeltown,	1	0	

HUNTERS AND ROADSTERS.

SECTION 14. BROOD MARES (with Foal at foot), suitable for field, foaled before 1st January 1878.

1. William Parker Adam, Tour House, Kilmaurs, Ayrshire, "Empress,"	20	0	0
2. Walter Mackenzie, of Edinbarnet, Old Kilpatrick, "Dinah,"	10	0	0
3. John A. Hay, Eshiels Farm, Peebles, "Leda,"	5	0	0

V. H. C., Alexander Baird of Urie, Stonehaven, "Faruz." C., Donald Macdonald, Newpark Farm, Stirling, "Heather Bloom."

SECTION 15. YELD MARES or GELDINGS, suitable for field, foaled before 1st January 1878.

1. John Rutherford, Summer Hill, Annan, Gelding, "Shamrock,"	20	0	0
2. John Cross, East Bank, Langbank, Gelding, "Mullingar,"	10	0	0
3. James Finlayson, jun., Merchiston, Johnstone, Gelding, "Fencer,"	5	0	0

V. H. C., Durham Kippen, of Busby, Glasgow, Gelding, "The Rover." H. C., P. Meyrick Pryce, 3rd Dragoon Guards, Maryhill Barracks, Glasgow, Gelding, "The Duke."

SECTION 16. FILLIES or GELDINGS, suitable for field, foaled on or after 1st January 1878.

1. Major T. C. Thompson, Milton Hall, Carlisle, Gelding, "Abbotsford,"	15	0	0
2. Lieut.-Col. J. Fletcher Hathorn, of Castle Wigg, Whithorn, Gelding, "Prince Charlie,"	8	0	0
3. Robert B. Hetherington, Auction Mart, Earl Street, Carlisle, Gelding, "Duke,"	4	0	0

V H. C., Robert B Hetherington, Auction Mart, Earl Street, Carlisle, Gelding, "Baggy."

Carry forward,	£634	16	0

Brought forward,	£634	16	0

SECTION 17. FILLIES or GELDINGS, suitable for Field, foaled on or after 1st January 1879.

1. Major T. C. Thompson, Milton Hall, Carlisle, Filly, "Melrose,"	10	0	0
2. John W. Hodgson, Burgh by Sands, Carlisle, Filly, "Rose of Athole,"	5	0	0
3. James M'Lean, South Medrox, Airdrie, Gelding, "Young Messenger,"	3	0	0
V. H. C., William Probert, Ochiltree, Ayrshire, Filly, "Ally." H. C, David Wilson, Crofthead, Ochiltree, Filly.			

SECTION 18. MARES or GELDINGS, suitable for Carriage, foaled before 1st January 1879.

1. William Pearce, Fairfield, Govan, Gelding, "General,"	20	0	0
2. William Pearce, Fairfield, Govan, Gelding, "Bismarck,"	10	0	0
3. Robert Williams, The Green, Wishaw, Gelding, "Sir George,"	5	0	0
V. H. C., William Roberts, Shamrock Buildings, Bathgate, Mare, "Louisa."			

SECTION 19. MARES or GELDINGS, suitable as hackneys or roadsters, between 14 and 15 hands.

1. John Rutherford, Summerhill, Annan, Mare, "Scottish Queen,"	10	0	0
2. Robert H. Fraser, Arngomery, Kippen, Mare, "Rose,"	5	0	0
3. Alexander Walker, Kilmarnock, Mare, "Nellie,"	3	0	0
V. H. C., Col. F. R Reid, of Gallowflat, Rutherglen, Mare, "Nora." H. C., Henry Lee Harvey, of Castle Semple, Lochwinnoch, Gelding, "Prince."			

SECTION 20. MARES or GELDINGS, not exceeding 15 hands, for Milk Cart of heavy draught.

1. Alexander Walker, Kilmarnock, Mare, "Lily,"	10	0	0
2. John Wilson, Priestgill, Strathaven, Gelding, "Charlie,"	5	0	0

SECTION 21. MARES or GELDINGS, not exceeding 14½ hands, for Milk Cart of light draught.

1. Alexander Robertson Ferguson of Luckiesfauld, Neilston, Gelding, "Sir George,"	10	0	0
2. William Craig, Buchley, Bishopbriggs, Mare,	5	0	0

EXTRA HORSES.

Very Highly Commended.

Arabian Stallion, Henry Lee Harvey of Castle Semple, Lochwinnoch, "Amdam,"	5	0	0
Hunter Mare, with foal at foot, winner of 1st Prize at Stirling 1881, Allan Kirkwood, Carbrane, Cumbernauld, "Jessie,"	5	0	0
Stallion, Douglas Breed, David Munro, Ibrox Farm, Govan, "Marquis of Douglas,"	5	0	0
Cob Pony Stallion, John M. Martin, Auchendennan Farm, Balloch, "Mars,"	5	0	0

PONIES.

SECTION 22. HIGHLAND STALLIONS, 14½ hands and under.

1. Joseph Relph, Sowerby Row, Southwaite, Carlisle, "Jack's Delight,"	6	0	0
2. Alexander Macdonald, Balranald, Lochmaddy, "Tom,"	3	0	0
3. Donald M'Kenzie, Glenloy, Fort-William, "Highland Laddie,"	1	0	0

SECTION 23. HIGHLAND MARES or GELDINGS, between 13 and 14½ hands.

1. George Robb, 11 Germiston Street, Glasgow, Gelding,	6	0	0
2. James M'Call, Veterinary College, Glasgow, Gelding, "Caleb,"	3	0	0
3. William Robertson, 11 St Paul's Square, Perth, Gelding, "Blair Athole,"	1	0	0

SECTION 24. MARES or GELDINGS, between 12½ and 14 hands.

1. R. H. Walker of Hartwood, West Calder, Mare, "Polly,"	6	0	0
2. Charles Henry Dundas, Gerrichrew, Dunira, Crieff, Mare, "Peggy,"	3	0	0
3. H. M. R. Ewing, Ardardan, Cardross, Gelding, "General,"	1	0	0
V. H. C., Allan M'Kay, Cross Arthurlie, Barrhead, Gelding, "Bruce." H. C., John Christie of Cowden, Cowden Castle, Dollar, Mare, "Rosa."			
Carry forward,	£785	16	0

Brought forward,	£785	16	0

SECTION 25. MARES or GELDINGS under 12½ hands.

1. Robert Baillie, 70 Armadale Street, Glasgow, Mare, "Maggie,"	6	0	0
2. John Christie of Cowden, Cowden Castle, Dollar, Mare, "Mazie,"	3	0	0
3. John Paterson, 522 Pollockshaws Road, Glasgow, Mare, "Maggie,"	1	0	0
H. C., R. D. Mackenzie, jun., Broomley, Alexandria, N.B., Gelding, "Donald." C., Thomas Watt, The Acre, Maryhill, Mare, "Peggy." C., Robert Kay, Linton Bankhead, Kelso, Mare, "Annie."			
	£795	16	0

CLASS III.—SHEEP.

BLACKFACED.

SECTION 1. TUPS above 1 Shear.

1. Thomas Welsh of Earlshaugh, Moffat,	£12	0	0
2. Charles Howatson of Glenbuck, Lanark,	8	0	0
3. Do. Do.	4	0	0
V. H. C., Thomas Welsh of Earlshaugh, Moffat. H. C., Thomas Welsh of Earlshaugh, Moffat. C., John Sloan, Barnhill, Patna.			

SECTION 2. SHEARLING TUPS.

1. Earl of Stair, K.T., Lochinch, Stranraer,	12	0	0
2. John Fleming, Ploughland, Strathaven,	8	0	0
3. Charles Howatson of Glenbuck, Lanark,	4	0	0
V. H. C., John Fleming, Ploughland, Strathaven. H. C., Charles Howatson of Glenbuck, Lanark. C., David Foyer, Knowehead, Campsie.			

SECTION 3. Pens of 3 EWES above 1 Shear, with LAMBS.

1. Charles Howatson of Glenbuck, Lanark,	10	0	0
2. Archibald Orr Ewing of Ballikinrain, M.P., Killearn,	5	0	0
3. David Foyer, Knowehead, Campsie,	2	0	0
V. H. C., James Duncan, Blairmore Farm, Greenock. H. C., James Duncan, Home Farm, Benmore, Kilmun, Greenock. C., Charles Howatson of Glenbuck, Lanark.			

LAMBS.

1. Charles Howatson of Glenbuck,	2	0	0
2. Charles Howatson of Glenbuck,	1	0	0

SECTION 4. Pens of 3 SHEARLING EWES or GIMMERS.

1. Robert Buchanan, Letter, Killearn,	10	0	0
2. Patrick Melrose, West Loch, Eddlestone,	5	0	0
3. James Duncan, Home Farm, Benmore, Kilmun, Greenock,	2	0	0
V. H. C., Charles Howatson of Glenbuck, Lanark. H. C., The Earl of Stair, K.T., Lochinch, Stranraer. C., Charles Howatson of Glenbuck, Lanark.			

SECTION 5. Pens of 1 Aged TUP, 2 EWES, 2 SHEARLINGS, and 2 LAMBS. The Ewes to have Lambs in Season 1882, and all bred by Exhibitor, except Aged Tup.

1. Charles Howatson of Glenbuck, Lanark,	8	0	0
2. Charles Howatson of Glenbuck, Lanark,	4	0	0
3. Patrick Melrose, West Loch, Eddlestone,	2	0	0
V. H. C., James Duncan, Home Farm, Benmore, Kilmun, Greenock.			

CHEVIOT.

SECTION 6. TUPS, above 1 Shear.

1. John A. Johnstone, Archbank, Moffat,	12	0	0
2. James Brydon, Kinnelhead, Moffat,	8	0	0
3. John A. Johnstone, Archbank, Moffat,	4	0	0
V. H. C., John A. Johnstone, Archbank, Moffat. H. C., James Brydon, jun., Holm of Dalquha'rn, Carsphairn, Galloway. C., John A. Johnstone, Archbank, Moffat.			
Carry forward,	£123	0	0

Brought forward,	£123	0	0

SECTION 7. SHEARLING TUPS.

1. James Brydon, Kinnelhead, Moffat,	12	0	0
2. John A. Johnstone, Archbank, Moffat,	8	0	0
3. John A. Johnstone, Archbank, Moffat,	4	0	0

V. H. C., John A. Johnstone, Archbank, Moffat. H. C., James Brydon, Kinnelhead, Moffat. C., John A. Johnstone, Archbank, Moffat.

SECTION 8. Pens of 3 EWES, above 1 Shear, with LAMBS.

1. Walter Mundell, Gollanfield, Fort-George Station,	10	0	0
2. Thomas Welsh, Ericstane, Moffat,	5	0	0
3. Thomas Welsh, Ericstane, Moffat,	2	0	0

LAMBS.

1. Walter Mundell, Gollanfield, Fort-George Station,	2	0	0
2. Thomas Welsh, Ericstane, Moffat,	1	0	0

V. H C., Thomas Welsh, Ericstane, Moffat.

SECTION 9. Pens of 3 SHEARLING EWES or GIMMERS.

1. Walter Mundell, Gollanfield, Fort-George Station,	10	0	0
2. Walter Mundell, Gollanfield, Fort-George Station,	5	0	0
3. Sir G. Graham Montgomery, Bart., of Stanhope, Stobo Castle, Stobo,	2	0	0

BORDER LEICESTER.

Tweeddale Gold Medal, Best Border Leicester Tup in the Yard.

W. S. Ferguson, Pictstonshill, Perth (£20, less 9s. 10d. income-tax),	19	10	2

SECTION 10. TUPS, above 1 Shear.

1. W. S. Ferguson, Pictstonshill, Perth,	12	0	0
2. A. J. Balfour of Whittinghame, M.P., Prestonkirk,	8	0	0
3. The Duke of Buccleuch and Queensberry, K.G., Dalkeith,	4	0	0

V. H. C., The Earl of Dalhousie, Panmure, Carnoustie. H. C., Robert Wallace, Auchenbrain, Mauchline. C., The Duke of Buccleuch and Queensberry, K.G., Dalkeith.

SECTION 11. SHEARLING TUPS.

1. The Earl of Dalhousie, Panmure, Carnoustie,	12	0	0
2. Robert Wallace, Auchenbrain, Mauchline,	8	0	0
3. Thomas Clark, Oldhamstocks Mains, Cockburnspath,	4	0	0

V. H. C., W. S. Ferguson, Pictstonshill, Perth. H. C., James Nisbet of Lambden, Greenlaw. C., Representatives of the late Robert Robeson, Springwells, Coldstream.

SECTION 12. Pens of 3 EWES above 1 Shear.

1. James Nisbet of Lambden, Greenlaw,	10	0	0
2. George Simson, Courthill, Kelso,	5	0	0
3. John Edgar, Kirkettle, Roslin,	2	0	0

C., John Wilson, Priestgill, Strathaven.

SECTION 13. Pens of 3 SHEARLING EWES or GIMMERS.

1. W. S. Ferguson, Pictstonshill, Perth,	10	0	0
2. James Nisbet of Lambden, Greenlaw,	5	0	0
3. Representatives of the late Robert Robeson, Springwells, Coldstream,	2	0	0

V. H. C., Thomas Clark, Oldhamstocks Mains, Cockburnspath. H. C., George Simson, Courthill, Kelso. C., John Wilson, Priestgill, Strathaven.

LONG-WOOLLED OTHER THAN BORDER LEICESTER.

SECTION 14. TUPS above 1 Shear.

Francis Gibson, Woolmet, Dalkeith (Cotswold),	3	0	0
Carry forward,	£288	10	2

Brought forward,	£288	10	2

SECTION 15. SHEARLING TUPS.

Francis Gibson, Woolmet, Dalkeith (Cotswold),	3	0	0

SECTION 16. Pens of 3 EWES above 1 Shear.

Francis Gibson, Woolmet, Dalkeith (Cotswold),	3	0	0

SECTION 17. Pens of 3 SHEARLING EWES or GIMMERS.

1. Francis Gibson, Woolmet, Dalkeith (Cotswold),	3	0	0
2. Francis Gibson, Woolmet, Dalkeith (Cotswold),	2	0	0

SHROPSHIRE.

SECTION 18. TUPS above 1 Shear.

1. The Earl of Strathmore, Glamis Castle, Forfar,	8	0	0
2. Lord Polwarth, Humbie, Upper Keith,		0	0
3. The Earl of Mansfield, K.T., Scone Palace, Perth,	2	0	0
V. H. C., The Earl of Mansfield, K.T., Scone Palace, Perth.			

SECTION 19. SHEARLING TUPS.

1. The Earl of Strathmore, Glamis Castle, Forfar,	8	0	0
2. Francis Gibson, Woolmet, Dalkeith,	4	0	0
3. The Earl of Strathmore, Glamis Castle, Forfar,	2	0	0

SECTION 20. Pens of 3 EWES above 1 Shear.

1. Francis Gibson, Woolmet, Dalkeith,		0	0
2. Francis Gibson, Woolmet, Dalkeith,	3	0	0
3. The Earl of Mansfield, K.T., Scone Palace, Perth,	1	0	0

SECTION 21. Pen of 3 SHEARLING EWES or GIMMERS.

1. The Earl of Strathmore, Glamis Castle, Forfar,	6	0	0
2. Francis Gibson, Woolmet, Dalkeith,	3	0	0
3. The Earl of Strathmore, Glamis Castle, Forfar,	1	0	0
H. C., Francis Gibson, Woolmet, Dalkeith.			

SHORT WOOLLED OTHER THAN SHROPSHIRE.

SECTION 22. TUPS above 1 Shear.

No Entry.

SECTION 23. SHEARLING TUPS.

No Entry.

SECTION 24. EWES above 1 Shear.

No Entry.

SECTION 25. Pens of 3 SHEARLING EWES or GIMMERS.

No Entry.

EXTRA SECTIONS.

SECTION 26. Pens of 5 BLACKFACED WETHERS, not above 4 Shear.

1. John M'Dougall, Goodlyburn, Perth,	4	0	0
2. Thomas Hamilton, Poniel, Douglas,	2	0	0

SECTION 27. Pens of 5 CHEVIOT WETHERS, not above 3 Shear.

No Entry.

SECTION 28. Pens of 5 HALF-BRED WETHERS not above 2 Shear.

No Entry.

Carry forward,	£353	10	2

Brought forward,	£353	10	2

SECTION 29. Pens of 5 CROSS-BRED WETHERS, not above 2 Shear.

No Entry.

SECTION 30. Pens of 5 HALF-BRED WETHER HOGGS.

David Cross of Knockdon, Maybole,	4	0	0

SECTION 31. Pen of 5 CROSS-BRED WETHER HOGGS.

1. John M'Dougall, Goodlyburn, Perth,	4	0	0
2. David Cross of Knockdon, Maybole,	2	0	0
V. H. C, John M'Dougall, Goodlyburn, Perth.			

EXTRA.

Highly Commended.

5 Cross Wether Hoggs, William Ritchie, Spott, Dunbar, Silver Medal,	0	16	0
	£364	6	2

CLASS IV.—WOOL.

SECTION 1. Best WOOLLED TUP, Blackfaced Breed.

1. Charles Howatson of Glenbuck, Lanark,	£3	0	0
2. John Fleming, Ploughland, Strathaven,	2	0	0
C. John Sloan, Barnhill, Patna.			

SECTION 2. Best WOOLLED TUP, CHEVIOT BREED.

1. James Brydon, Kinnelhead, Moffat,	3	0	0

SECTION 3. BEST WOOLLED TUP, LEICESTER BREED.

1. The Earl of Dalhousie, Panmure, Carnoustie,	3	0	0
2. Robert Wallace, Auchenbrain, Mauchline,	2	0	0
V. H. C., The Duke of Buccleuch and Queensberry, K.G., Dalkeith.			
	£13	0	0

CLASS V.—SWINE.

LARGE BREED.

SECTION 1. BOARS.

1. The Earl of Haddington, Tyninghame, Prestonkirk,	£8	0	0
2. The Earl of Haddington, Tyninghame, Prestonkirk,	4	0	0
3. John Thomson, Prospect Hill, Cathcart,	2	0	0

SECTION 2. SOWS.

1. The Earl of Haddington, Tyninghame, Prestonkirk,	6	0	0
2. John M. Martin, Auchendennan, Balloch,	3	0	0
3. James Barr, Gartnavel, Hillhead, Glasgow,	1	0	0

SECTION 3. Pens of 3 PIGS, not above 8 months old.—No animals forward.

BLACK or BERKSHIRE.

SECTION 4. BOARS.

James Duncan, Home Farm, Benmore, Kilmun,	8	0	0

SECTION 5. SOWS.

1. Archibald Campbell Douglas of Mains, Milngavie,	6	0	0
2. Francis Gibson, Woolmet, Dalkeith,	3	0	0
3. David Wood, Benmore, Greenock,	1	0	0

SECTION 6. Pen of 3 PIGS, not above 8 months old.

1. R. T. N. Spier, of Culdees, Muthill,	4	0	0
Carry forward,	£46	0	0

Brought forward,	£46 0 0

SMALL BREED.

SECTION 7. BOARS.

James Kilpatrick, Craigie Mains, Craigie,	8 0 0

SECTION 8. SOWS.

1. Robert Baillie, 3 Glen Street, Paisley,	6 0 0
2. Robert Baillie, 3 Glen Street, Paisley,	3 0 0

SECTION 9. Pens of 3 PIGS, not above 8 months old.

The Earl of Mansfield, K.T., Scone Palace, Perth,	4 0 0

EXTRA.

Commended, Berkshire Boar, winner of 1st prize at Stirling, 1881, R. T. N. Spier, of Culdees, Muthill, ... Medium Silver Medal,	0 10 6
	£67 10 6

CLASS VI.—POULTRY.

DORKING, Silver Grey.	Cock.—1. Robert Buchanan, Letter, Killearn,	£1 0 0
	2. D. Cameron, Grougar, Kilmarnock,	0 10 0
DORKING, Silver Grey.	2 Hens—1. James Cranston, Holestane, Thornhill,	1 0 0
	2. James Cranston, Holestane, Thornhill,	0 10 0
DORKING, Silver Grey.	Cockerel.—1. James Cranston, Holestane, Thornhill,	1 0 0
	2. James Robertson, Gordon Castle, Fochabers,	0 10 0
DORKING, Silver Grey.	2 Pullets.—1. James Cranston, Holestane, Thornhill,	1 0 0
	2. James Robertson, Gordon Castle, Fochabers,	0 10 0
DORKING, Coloured.	Cock.—1. James Cranston, Holestane, Thornhill,	1 0 0
	2. James Cranston, Holestane, Thornhill,	0 10 0
DORKING, Coloured.	2 Hens.—1. James Cranston, Holestane, Thornhill,	1 0 0
	2. James Cranston, Holestane, Thornhill,	0 10 0
DORKING, Coloured.	Cockerel.—1. William Adam, Tynet Gate, Fochabers,	1 0 0
	2. James Cranston, Holestane, Thornhill,	0 10 0
DORKING, Coloured.	2 Pullets.—1. James Cranston, Holestane, Thornhill,	1 0 0
	2. Sir George Macpherson Grant, Bart., M.P., of Ballindalloch,	0 10 0
COCHIN-CHINA.	Cock.—1. John Pollock, Busby,	1 0 0
	2. Thomas Young, Girvan,	0 10 0
COCHIN-CHINA.	2 Hens.—No Entry.	
COCHIN-CHINA.	Cockerel.—1. D. Thomson, Union Street, Stonehouse, Hamilton,	1 0 0
	2. Thomas Fullarton, Loans, Troon,	0 10 0
COCHIN-CHINA.	2 Pullets.—1. Robert Toplis, Glamis, Forfar,	1 0 0
BRAHMAPOOTRA.	Cock.—1. William Nicoll, 148 Scouringburn, Dundee,	1 0 0
	2. William H. Benvie, Daisybank, Maryfield, Dundee,	0 10 0
BRAHMAPOOTRA.	2 Hens.—1. William Nicoll, 148 Scouringburn, Dundee,	1 0 0
	2. John M'Glashan, Bowling, Glasgow,	0 10 0
BRAHMAPOOTRA.	Cockerel.—1. William Good, Bent Cottage, Hamilton,	1 0 0
	2. William Nicoll, 148 Scouringburn, Dundee,	0 10 0
BRAHMAPOOTRA.	2 Pullets.—1. William Good, Bent Cottage, Hamilton,	1 0 0
	2. Wm. H. Benvie, Daisybank, Maryfield, Dundee,	0 10 0
SPANISH.	Cock.—1. Thomas Martin, Muiryhill, Thornhill,	1 0 0
SPANISH.	2 Hens.—1. James Norval, Hawkhill, Alloa,	1 0 0
SPANISH.	Cockerel.—1. Thomas Martin, Muiryhill, Thornhill,	1 0 0
	2. Mrs D. Mackenzie, Post Office, Meigle,	0 10 0
SPANISH.	2 Pullets.—1. James Norval, Hawkhill, Alloa,	1 0 0
	2. Mrs Shanks, Cuthelton, Denny,	0 10 0
	Carry forward,	£27 0 0

Brought forward,	£27	0	0
SCOTCH GREY. Cock.—1. Robert Muir, Shoulderrigg, Lesmahagow,	1	0	0
2. The Earl of Southesk, K.T., Kinnaird Castle, Brechin,	0	10	0
SCOTCH GREY. 2 Hens.—1. William Pettigrew, Blackhall, Shotts,	1	0	0
2. William G. M'Dougall, George Street, Stirling,	0	10	0
SCOTCH GREY. Cockerel.—1. James Chalmers, Rough Crook, Carnwath,	1	0	0
2. William G. M'Dougall, George Street, Stirling,	0	10	0
SCOTCH GREY. 2 Pullets.—1. Alexander Hamilton, Braidwood Tile Works, Carluke,	1	0	0
2. James Chalmers, Rough Crook, Carnwath,	0	10	0
HAMBURG, Cock.—1. Allan Glen, 9 Slow Place, Paisley,	1	0	0
2. James A. Hamilton, of Whiteshawgate, Strathaven,	0	10	0
HAMBURG. 2 Hens.—1. Allan Glen, 9 Slow Place, Paisley,	1	0	0
2. John Lindsay, Thornhill, Stewarton,	0	10	0
HAMBURG. Cockerel.—1. Walter Scott, Muiredge, Sanquhar,	1	0	0
2. James Addison, Milton, Bowling,	0	10	0
HAMBURG. 2 Pullets.—1. James W. Graham, Hayrigg, Lockerbie,	1	0	0
2. Henry Digby, East View, Lindley, Huddersfield,	0	10	0
POULTRY—Any other Pure Breed. Cock.—1. Thomas Fullarton, Loans, Troon (Creve),	1	0	0
2. The Earl of Mansfield, K.T., Scone Palace, Perth (White Dorking),	0	10	0
POULTRY—Any other Pure Breed. 2 Hens.—1. The Earl of Mansfield, K.T., Scone Palace, Perth (White Dorking),	1	0	0
POULTRY—Any other Pure Breed. Cockerel.—1. The Earl of Mansfield, K.T., Scone Palace, Perth (White Dorking),	1	0	0
2. Thomas Fullarton, Loans, Troon (Creve),	0	10	0
POULTRY—Any other Pure Breed. 2 Pullets.—1. Thomas Fullarton, Loans, Troon (Creve),	1	0	0
2. The Earl of Mansfield, K.T., Scone Palace, Perth (White Dorking),	0	10	0
GAME—Black or Brown Reds. Cock.—1. D. Harley, Hillwood, Ratho,	1	0	0
2. Andrew Warwick, Outer Woodhead, Canonbie,	0	10	0
GAME—Black or Brown Reds 1 Hen.—1. D. Harley, Hillwood, Ratho,	1	0	0
2. Andrew Warwick, Outer Woodhead, Canonbie,	0	10	0
GAME—Black or Brown Reds. Cockerel.—1. D. Harley, Hillwood, Ratho,	1	0	0
2. John Borthwick, Garvald Lodge, Dolphinton,	0	10	0
GAME—Black or Brown Reds. 1 Pullet.—1. D. Harley, Hillwood, Ratho,	1	0	0
2. John Borthwick, Garvald Lodge, Dolphinton,	0	10	0
GAME—Any other Pure Breed. Cock.—1. D. Harley, Hillwood, Ratho (Duckwing),	1	0	0
GAME—Any other Pure Breed. 1 Hen.—1. D. Harley, Hillwood, Ratho (Duckwing),	1	0	0
2. Andrew Warwick, Outer Woodhead, Canonbie (Duckwing),	0	10	0
GAME—Any other Pure Breed. Cockerel.—1. Allan M'Kay, Cross Arthurlie, Barrhead (Duckwing),	1	0	0
2. D. Harley, Hillwood, Ratho (Duckwing),	0	10	0
GAME—Any other Pure Breed. 1 Pullet.—1. Allan M'Kay, Cross Arthurlie, Barrhead (Duckwing),	1	0	0
2. D. Harley, Hillwood, Ratho (Pile),	0	10	0
BANTAMS—Any Pure Breed. Cock.—1. Miss Bessie P. Frew, Kirkcaldy (Game),	1	0	0
2. Miss Agnes Meikle, Melrose (Game),	0	10	0
BANTAMS—Any Pure Breed. 2 Hens.—1. Miss Rachel C. Frew, Kirkcaldy (Silver Laced),	1	0	0
2. John Lindsay, Thornhill, Stewarton (Black),	0	10	0
BANTAMS—Any Pure Breed. Cockerel.—1. F. Brooke, 24 Greenhead Road, Huddersfield (Black Rose Comb),	1	0	0
2. D. Harley, Hillwood, Ratho (Pile Game),	0	10	0
Carry forward,	£60	10	0

	Brought forward,	£60	10	0
BANTAMS—Any Pure Breed.	2 Pullets.—1. D. Harley, Hillwood, Ratho (Pile Game),	1	0	0
	2 Robert E. Frew, Kirkcaldy (Game),	0	10	0
DUCKS—White Aylesbury.	Drake.—1. Andrew Warwick, Outer Woodhead, Canonbie,	1	0	0
	2. James Dickie, Blacksmith, Yoker,	0	10	0
DUCKS—White Aylesbury.	1 Duck.—1 William H. Glass, St. John's Lane, Hamilton,	1	0	0
	2. John Kirkwood, North Hainings, Bo'ness,	0	10	0
DUCKS—White Aylesbury.	Drake (Young).—1. William H. Glass, St. John's Lane, Hamilton,	1	0	0
	2. Matthew Smith, Townhead, Thornhill,	0	10	0
DUCKS—White Aylesbury.	1 Duckling.—1. William H. Glass, St. John's Lane, Hamilton,	1	0	0
	2. Thomas D. Findlay, Easterhill, Glasgow,	0	10	0
DUCKS—Rouen.	Drake.—1. Admiral Maitland Dougall of Scotscraig, Tayport, Fife,	1	0	0
	2. William H. Glass, St John's Lane, Hamilton,	0	10	0
DUCKS—Rouen.	1 Duck.—1. William H. Glass, St John's Lane, Hamilton,	1	0	0
	2. Admiral Maitland Dougall of Scotscraig, Tayport, Fife,	0	10	0
DUCKS—Rouen.	Drake (Young).—1. Andrew Warwick, Outer Woodhead, Canonbie,	1	0	0
	2. Admiral Maitland Dougall of Scotscraig, Tayport, Fife,	0	10	0
DUCKS—Rouen.	1 Duckling.—1. Andrew Warwick, Outer Woodhead, Canonbie,	1	0	0
	2. Admiral Maitland Dougall of Scotscraig, Tayport, Fife,	0	10	0
DUCKS—Any other Pure Breed.	Drake.—1. Thomas Martin, Muiryhill, Thornhill (Pekin),	1	0	0
	2. The Hon. Marjory Louisa Murray, Scone Palace, Perth (Muscovey),	0	10	0
DUCKS—Any other Pure Breed.	1 Duck.—1. Thomas Martin, Muiryhill, Thornhill (Pekin),	1	0	0
	2. Andrew Warwick, Outer Woodhead, Canonbie (Pekin),	1	0	0
DUCKS—Any other Pure Breed.	Drake (Young).—Andrew Warwick, Outer Woodhead, Canonbie (Pekin),	1	0	0
	2. Thomas Martin, Muiryhill, Thornhill (Pekin),	0	10	0
DUCKS—Any other Pure Breed.	1 Duckling.—1. Andrew Warwick, Outer Woodhead, Canonbie (Pekin),	1	0	0
	2. Andrew Warwick, Outer Woodhead, Canonbie (Black East Indian),	0	10	0
TURKEYS—Any Pure Breed.	Cock.—1. Admiral Maitland Dougall of Scotscraig, Tayport (Black Norfolk),	1	0	0
	2. The Earl of Mansfield, K.T., Scone Palace, Perth (Black Norfolk),	0	10	0
TURKEYS—Any Pure Breed.	1 Hen.—1. Admiral Maitland Dougall of Scotscraig, Tayport (Black Norfolk),	1	0	0
TURKEYS—Any Pure Breed.	Cock (Poult).—No Entry.			
TURKEYS—Any Pure Breed.	1 Hen (Poult).—No Entry.			
GEESE—Any Pure Breed.	Gander.—1. The Earl of Mansfield, K.T., Scone Palace, Perth (Toulouse),	1	0	0
	2. Andrew Warwick, Outer Woodhead, Canonbie (Grey Toulouse),	0	10	0
GEESE—Any Pure Breed.	1 Goose.—1. Andrew Warwick, Outer Woodhead, Canonbie (Grey Toulouse),	1	0	0
	2. The Earl of Mansfield, K.T., Scone Palace, Perth (Toulouse),	0	10	0
GEESE—Any Pure Breed.	Gander (Young).—1. Andrew Warwick, Outer Woodhead, Canonbie (White Embden),	1	0	0
GEESE—Any Pure Breed.	1 Gosling.—1. Andrew Warwick, Outer Woodhead, Canonbie (Grey Toulouse),	1	0	0
		£87	10	0

CLASS VII.—DAIRY PRODUCE.

SECTION 1. CURED BUTTER, not less than 7 lbs.

1.	Henry Orr, Torrance, Bathgate,	£6	0	0
2.	Alexander Fleming, Threepland, Eaglesham,	4	0	0
3.	James Morton, Kirktonmuir, Eaglesham,	2	0	0

V. H. C, James Wilson (Boghall), Nethermill Dairy, Houston. H. C., William Harvey, Milndovan, Cardross. C., Peter Lithgow, Drumtall, East Kilbride.

SECTION 2. POWDERED BUTTER, not less than 7 lbs.

1.	Hugh Gilmour, Ballimore, Tighnabruaich,	6	0	0
2	Alexander Fleming, Threepland, Eaglesham,	4	0	0
3.	Henry Orr, Torrance, Bathgate,	2	0	0

V. H. C., Donald M'Laren, Middle Mugdock, Milngavie. H. C., James Wilson (Boghall), Nethermill Dairy, Houston. C., Peter Lithgow, Drumtall, East Kilbride.

SECTION 3. FRESH BUTTER, Three ½-lb. Rolls.

1.	Henry Orr, Torrance, Bathgate,	6	0	0
2	Alexander Fleming, Threepland, Eaglesham,	4	0	0
3.	Donald M'Laren, Middle Mugdock, Milngavie,	2	0	0

V. H. C., Donald Macfarlane, Balmuildy, Bishopbriggs. H. C., Hugh Gilmour, Ballimore, Tighnabruaich. C., Archibald Bulloch, Milliken, New Kilpatrick.

SECTION 4. CHEDDAR CHEESE, 56 lbs. and upwards.

1.	William M'Master, Challoch, Dunragit, Wigtownshire,	8	0	0
2.	Thomas Kerr, Mid Kelton, Castle Douglas,	6	0	0
3	Alexander Rankin, Aird, Stranraer,	3	0	0

SECTION 5. CHEDDAR CHEESE, 14 lbs. and under.

1.	Thomas Kerr, Mid Kelton, Castle Douglas,	4	0	0
2.	Alexander Plunket, Ingleston of Borgue, Kirkcudbright,	2	0	0
3.	Robert Drummond, Pocknave, Kilmarnock,	1	0	0

SECTION 6. DUNLOP CHEESE, 30 lbs. and upwards.

1.	John Gibb, Tarbrax Home Farm, Carnwath,	6	0	0
2.	Andrew Gemmell, Lugton Ridge, Beith, Ayrshire,	4	0	0
3.	Thomas Nimmo, Lawhead, Carnwath,	2	0	0

SECTION 7. CHEESE, any other variety, 30 lbs. and upwards.

1.	William M'Master, Challoch, Dunragit (White),	6	0	0
2	James M'Master, Currochturrie, Kirkmaiden,	4	0	0
3.	William M'Master, Cruggleton, Garlieston (White),	2	0	0

SECTION 8. CHEESE, any variety, 15 lbs. and under.

1.	William M'Master, Cruggleton, Garlieston (White),	4	0	0
2	John Fleming, Ploughland, Strathaven (Imitation English),	2	0	0
3.	James M'Master, Currochturie, Kirkmaiden,	1	0	0
		£91	0	0

CLASS VIII.—IMPLEMENTS.

STRING SHEAF BINDERS.

1.	R. Hornsby & Sons, Spittlegate Iron Works, Grantham,	£100	0	0
2.	W. A. Wood, 36 Worship Street, London,	50	0	0
3.	J. & F. Howard, Britannia Iron Works, Bedford,	25	0	0
		£175	0	0

CALEDONIAN APIARIAN SOCIETY.

David Wood, Benmore—Observatory Hive,	Silver Medal,	£0	16	0
Wm. Sword, Falkirk—Bee-Driving,	Silver Medal,	0	16	0
		£1	12	0

PISCICULTURE.

Sir James R. Gibson Maitland of Barnton, Bart.,	Gold Medal,	£10	0	0

UTILISATION OF TOWN SEWAGE.

Native Guano Company, Aylesbury,	Minor Gold Medal,	£3	15	0

ABSTRACT OF PREMIUMS.

	£	s.	d.
Cattle,	£1022	8	0
Horses,	795	16	0
Sheep,	364	6	2
Wool,	13	0	0
Swine,	67	10	6
Poultry,	87	10	0
Dairy Produce,	95	0	0
Implements,	175	0	0
Caledonian Apiarian Society,	1	12	0
Pisciculture,	10	0	0
Utilisation of Town Sewage,	3	15	0
	£2631	17	8

JUDGES.

Shorthorn.—L. C. Chrisp, Hawkhill, Alnwick; Silvester Campbell, Kinellar, Blackburn, Aberdeen; George Drewry, Holker, Carke in Cartmel, Carnforth.

Ayrshire.—Alexander Allan, Carbarns, Wishaw; William Craig, Buchley, Bishopbriggs; James J. Gillespie, St. Colmes, Ballinluig.

Polled Angus or Aberdeen.—Robert Bruce, Manor House Farm, Great Smeaton, Northallerton; George J. Walker, Portlethen, Aberdeen; James Smith, Mullochard, Ballindalloch.

Galloway.—James Biggar, yr. of Chapelton, Grange, Dalbeattie; David Hardie, Priesthaugh, Hawick.

Highland.—James Campbell, Ormaig, Kilmartin, Lochgilphead; Robert Lawrie, Fincharn, Ford, Lochaweside, Lochgilphead.

Fat Stock and Swine.—James Butters, 3 Charing Cross, Glasgow; James Deans, Dalkeith Park, Dalkeith; R. H. Harris, Earnhill, Forres.

Draught Stallions and Entire Colts.—Hugh Andrew, Lennoxlove, Acredales, Haddington; James Cunningham, Tarbreoch, Dalbeattie; William Rigg, Banks, Kirkcudbright.

Draught Mares, Fillies, and Geldings.—William Ford, Fenton Barns, Drem; Robert Renwick, Dalmuir, Duntocher; John Steel, Lochwood, Coatbridge.

Hunters, Roadsters, and Ponies.—William Forbes, of Callander, Falkirk; Frederick Ernest Villiers, Closeburn Hall, Thornhill; Colonel Williamson, of Lawers, Crieff.

Blackfaced.—John Craig, South Halls, Strathaven; Thomas Elliot, Blackhaugh, Galashiels; William Whyte, Spott, Kirriemuir.

Cheviot.—Thomas Elliot, Hindhope, Jedburgh; Robert Paterson, of Birthwood, Biggar.

Border Leicester and other Long-Woolled.—George Torrance, Sisterpath, Dunse; Richard Tweedie, The Forrest, Catterick; Jacob Wilson, Chillingham Barns, Alnwick.

Shropshire and other Short-Woolled.—Thomas S. Minton, Montford, Shrewsbury.

Wool.—The Judges of the various Classes of Sheep.

Swine.—The Judges of Fat Stock.

Poultry.—James Dixon, North Park, Clayton, Bradford.

Dairy Produce.—Alexander Osborne, 45 Candleriggs, Glasgow; George T. Samson, Cumnock.

ATTENDING MEMBERS.

Shorthorn.—W. S. Cooper of Failford; James Craig, Robroyston.

Ayrshire.—Sir James H. Gibson-Craig, of Riccarton, Bart.; Andrew Allan, Munnoch.

Polled Angus or Aberdeen.—Sir John W. P. Campbell Orde, Bart.; Robert M'Kean, Lumloch.

Galloway.—Thomas Tennant, of Ryeland; James Clelland, Knockenlaw.

Highland.—John M'Arthur, Barbreck; James Park, Dechmont.

Fat Stock and Swine.—John M. Martin, yr. of Auchendennan; William Dingwall, Ramornie.

Draught Stallions and Entire Colts.—George L. Houstoun of Johnstone; Andrew Smith, Castle Mains.

Draught Mares, Fillies, and Geldings.—Gideon Pott of Dod; Hugh Lindsay, Meadowflatt.

Hunters, Roadsters, Ponies, and Extra Horses.—A. Johnstone Douglas, of Lockerbie; Andrew Fleming, Calla.

Blackfaced.—Captain Boyle of Shewalton; James Allan, junior, Balnacoole.

Cheviot.—Sir W. C. Anstruther, Bart.; Robert Robertson, Breachoch.

Border Leicester and other Long-Woolled.—John Windsor Stuart, Rothesay; William Bartlemore, Paisley.

Shropshire and other Short-Woolled.—C. G. Shaw, Ayr; James Duncan, Rhubodach.

Poultry.—Sir James Bain, Glasgow; John Scott Dudgeon, Longnewton.

Dairy Produce.—Councillor John Young, Glasgow; William Wallace, Graham Square, Glasgow.

III.—DISTRICT COMPETITIONS.

CATTLE.

NAME OF DIST.	PREMIUM AWARDED TO	FOR	AMOUNT.		
Formartine	James Black, Bartholchapel	Shorthorn Bull Class I.* £4 & Med. Sil. Med.	£4	10	6
	Alexr. Davidson, Mains of Cairnbrogie	do. do.	3	0	0
	George Shepherd, Shethin	do. do.	1	0	0
	Miss Hepburn, Overtown	do. Class II.† £3 & Med. Sil. Med.	3	10	6
	Major Ramsay of Barra	do. do.	2	0	0
	Robt. Copland, Milton of Ardlethen	do. do.	1	0	0
	James Manson, Oakhill	Polled Heifer £3 & Med. Sil. Med.	3	10	6
	John Grant, Methlick	do.	2	0	0
	Thomas Milne, Gateside	. . . . .	1	0	0
Kinglassie	John Armour, Goatmilk	Shorthorn Heifer £3 & Med. Sil. Med.	3	10	6
	William Arnott, Nether Stenton	do.	2	0	0
	John Armour, Goatmilk	do.	1	0	0
County of Ayr	Vote in aid of Premiums, £20				
	Wm. Bartlemore, Netherhouses	Ayrshire Bull Silver Medal	0	16	0
	Wm. Bartlemore, Netherhouses	do. Class I. Med. Sil. Med.	0	10	6
	R. & P. Wardrop, Garlaff	do. Class II. Med. Sil. Med.	0	10	6
	R. & P. Wardrop, Garlaff	Ayrshire Heifer Med. Sil. Med.	0	10	6
Central Banffshire	James M'William, Stoneytown	Shorthorn Bull Class II. £3 & Med. Sil. Med.	3	10	6
	George Dean, Brangan	do. do.	2	0	0
	Reprs. of late A. Longmore, Rettie	do. do	1	0	0
	W. J. Tayler, Rothiemay House	Polled Heifer . . £3 & Med. Sil Med.	3	10	6
	T. F. Inkson, Kinermony	do.	2	0	0
	Sir Geo. Macpherson Grant, Bt., M.P.	do.	1	0	0
Stirlingshire	George Campbell, Gallangad	Ayrshire Bull Class I. £4 & Med. Sil. Med	4	10	6
	William M'Farlane, Todsbughts	do. do.	3	0	0
	James Shanks, Headswood	do. do.	1	0	0
	W. A. M'Lachlan of Auchentroig	do. Class II. £3 & Med. Sil. Med.	3	10	6
	John Young, Cobblebrae	do. do.	2	0	0
	Alex. M'Gregor, Culmore	do. do.	1	0	0
	Peter M'Caull, Dykedale	Ayrshire Heifer £1 10s. & Med. Sil. Med.	2	0	6‡
	James Christie, Bandeath	do.	1	0	0‡
	J. T. S. Paterson, Plean	do.	0	10	0‡
Mull, Coll, and Tiree	John M'Phail, Scalastle	Highland Bull Class I. £4 & Med. Sil. Med.	4	10	6
	John N. Forsyth, Quinish	do. do.	3	0	0
	James Shaw, Mongastle	do. do.	1	0	0
	Robert Lang, Aros	do. Class II. £3 & Med. Sil. Med.	3	10	6
	Lt.-Col. Greenhill Gardyne, Glenforsa	do. do.	2	0	0
	Lachlan M'Innes, Pennygowan	do. do.	1	0	0
	H. A. Campbell, Ardfenaig	Highland Heifer £3 & Med. Sil. Med.	3	10	6
	H. A. Campbell, Ardfenaig	do.	2	0	0
	J. N. Forsyth, Quinish	do.	1	0	0
Renfrewshire	William Bartlemore, Netherhouses	Ayrshire Bull Silver Medal	0	16	0
	William Bartlemore, Netherhouses	do. Class I. £4 & Med. Sil. Med.	4	10	6
	Andrew Hoggan, jun., Busby	do. do.	3	0	0
	Robert Moffat, Freeland	do. do. . . . ,	1	0	0
		Carry forward,	£93	0	0

*Aged Bulls. †Two-year old Bulls.

‡ Half Premiums awarded, the number of Lots being under five.

NAME OF DIST.	PREMIUM AWARDED TO	FOR	AMOUNT.		
		Brought forward,	£93	0	0
Renfrewshire—continued	Homer Young, Greenends	Ayrshire Bull Class II. £3 & Med. Sil. Med.	3	10	6
	William Buchanan, Goldenlee	do. do.	2	0	0
	John Erskine, Law	do. do. . .	1	0	0
	James Wilson, Boghall	Ayrshire Heifer £3 & Med. Sil. Med.	3	10	6
	John Holm, Jaapston	do.	2	0	0
	Andrew Hoggan, jun., Busby	do.	1	0	0
Buchan	William Penny, Auchlee	Shorthorn Bull Class I. £4 & Med. Sil. Med.	4	10	6
	Robt. Brebner, Lumbs	do. do. . . .	3	0	0
	James Brown, Hilton	do. do. . . .	1	0	0
	James Beaton, Monyruy	Polled Bull Class II. £3 & Med. Sil. Med.	3	10	6
	Lt.-Col. Ferguson of Pitfour	do. do. . . .	2	0	0
	Trustees of Geo. Baird, Strichen	do. do. . . .	1	0	0
	Lt.-Col. Ferguson of Pitfour	Polled Heifer £3 & Med. Sil. Med.	3	10	6
	Alex. Beddie, Banks	do.	2	0	0
	Lt.-Col. Ferguson of Pitfour	do.	1	0	0
Deeside Union	Lewis Strachan, Cluny	Shorthorn Bull Class I. Med. Sil. Med.	0	10	6
	James Shaw, Tillyching	do. Class II. Med. Sil. Med.	0	10	6
	George Reid, Baads	Polled Heifer Med. Sil. Med.	0	10	6
Lorn	D. MacGregor, Ardconnel	Highland Bull Silver Medal	0	10	6
	John M'Lachlan, Clachdhu	do. Class I. Med. Sil. Med.	0	10	6
	Duncan M'Callum, Clenmackrie	do. Class II. Med Sil. Med.	0	10	6
	D. MacGregor, Ardconnel	Highland Heifer Med. Sil. Med.	0	10	6
Inveraray	J. C. Kay of Cladich	Highland Bull Class I. Med. Sil. Med.	0	10	6
	Colin M'Arthur, Tullich	Highland Heifer Med. Sil. Med.	0	10	6

HORSES FOR AGRICULTURAL PURPOSES.

Eskdale and Liddesdale	Matthew Pool, Woodhead	Stallion	25	0	0
Morayshire	John Duncan, Pitcaple	Stallion	25	0	0
Lower Ward of Renfrewshire.	William Wyllie, Perth	Stallion	25	0	0
Vale of Alford.	George Wilson, Whiteside	Stallion	25	0	0
Lesmahagow	Gavin Hamilton of Auldtown	Brood Mare . . £4 & Med. Sil. Med.	4	10	6
	Gavin Hamilton of Auldtown	do.	3	0	0
	William Wilson, Midtown	do.	1	0	0
Carrick	David Cross of Knockdon	Brood Mare . . £4 & Med. Sil. Med	4	10	6
	Alex. M. Rankine, Lochlands	do	3	0	0
	William Paterson, South Threave	do.	1	0	0
Cupar and St Andrews	J. Brown of Balmullo	Brood Mare . . £4 & Med. Sil. Med.	4	10	6
	R. Blyth, Balmbreich	do.	3	0	0
	George Millie, Kilmaron	do.	1	0	0
Nairnshire	Alexr. Winton, Viewhill	Brood Mare . . £4 & Med. Sil. Med.	4	10	6
	J. Cumming, Allanfearn	do.	3	0	0
	Jas. M'Kessack, Earnside	do.	1	0	0
Earl of Selkirk's Tenantry and District	William Gray, Muncraig	Brood Mare . . £4 & Med. Sil. Med.	4	10	6
	James Muir, Lochfergus	do.	3	0	0
	William Gray, Muncraig	do.	1	0	0
		Carry forward	£274	19	6

NAME OF DIST.	PREMIUM AWARDED TO	FOR		AMOUNT.		
			Brought forward,	£274	19	6
Central Strathearn	Robert Gardiner, Chapel Bank	Brood Mare	£4 & Med. Sil. Med.	4	10	6
	David Dow, Balmanno	do.		3	0	0
	David Dow, Balmanno	do.		1	0	0
Clackmannan	David Drysdale, Lornshill	One-year old Colt	£1 & Med. Sil Med.	1	10	6*
	D. & J. Fisher, Jellyholm	do.		0	0	0*
	James Orr, of Harvieston	do.		0	5	0
	James M'Nab, Middleton Kerse	Two-year old Filly	£3 & Med. Sil. Med.	3	0	6
	James Orr, of Harvieston	do.		2	0	0*
	William J. Malcolm, Dunmore	do.		1	0	0
	A. M'Nab, Middleton, Kerse	One-year old Filly	£2 & Med. Sil. Med.	2	10	6
	John Coubro, Hawkhill	do.		1	0	0
	James Orr of Harvieston	do.		0	10	0
Lockerbie	W. R Farish, Kirklands	One-year old Colt	£2 & Med. Sil.Med.	2	10	6
	John Taylor, Gateside	do.		1	0	0
	John Paterson, Fingland	do.		0	10	0
	John Richardson, Purdomston	Two-year old Filly	£3 & Med. Sil. Med.	3	10	6
	John Common, Corrielaw	do.		2	0	0
	J. Carruthers, Kirkhill	do.		1	0	0
	Walter Common, Bridgemuir	One-year old Filly	£2 & Med Sil. Med.	2	10	6
	Walter Common, Bridgemuir	do.		1	0	0
	Robert Bell, Dalmakether	do.		0	10	0
Eastern District of Berwickshire	George Torrance, Sisterpath	One-year old Colt	£1 & Med. Sil. Med.	1	10	6
	Gavin Jack, Foulden Newton	do.		0	10	6
	David Logan, Brow of the Hill	do.		0	5	0*
	Gavin Jack, Foulden Newton	Two-year old Filly	£3 & Med. Sil. Med.	3	10	6*
	Robert Rae, Burnbank	do.		2	0	0
	W. Cairns, Clarabad	do.		1	0	0
	Gavin Jack, Foulden Newton	One-year old Filly	£2 & Med. Sil. Med.	2	10	6
	Henry H. Craw, Foulden West Mains	do.		1	0	0
	Alex. White, Kelloe Mains	do.		0	10	0
Lauderdale	J. W. Lawrie, Mitchelston	Two-year old Filly	£3 & Med. Sil. Med.	3	10	6
	Thomas Neilans, New Mills	do.		2	0	0
	Wm. Dickenson, Newbigging	do.		1	0	0
	Thomas Neilans, New Mills	One-year old Filly	£1 & Med. Sil. Med.	1	10	6*
	J. W. Lawrie, Mitchelston	do.		0	10	0*
	John Graham, Crookston Mains	do.		0	5	0*
Machars	William Smith, Craigdhu	One-year old Colt	£2 & Med. Sil. Med.	2	10	6
	Alex. M'Keand, Druchtay	do.		1	0	0
	Robt. M'Dowall, Auchengallie	do.		0	10	0
	T. & J. Picken, Barsalloch	Two-year old Filly	£3 & Med. Sil. Med.	3	10	6
	Alex. M'Whinnie, Aireyolland	do		2	0	0
	Andrew M'Dowal, Milton	do.		1	0	0
	Archibald Brown, Balnacraig	One-year old Filly	£2 & Med. Sil. Med.	2	10	6
	Jas. Jardine, Blairshannoch	do.		1	0	0
	Jas. M'Connell, Boreland	do.		0	10	0
County of Peebles	David Baxter, Dovecot	One-year old Colt	£2 & Med. Sil. Med.	2	10	6
	David Alston, Hyndford	do.		1	0	0
	Andrew Fleming, Calla	do.		0	10	0
	W. A. Woddrop, Garvald	Two-year old Filly	£3 & Med. Sil. Med.	3	10	6
	W. A. Woddrop, Garvald	do.		2	0	0
	David Alston, Hyndford	do.		1	0	0
	Lord Arthur Cecil, Orchard Mains	One-year old Filly	£2 & Med. Sil. Med.	2	10	6
	Jas. Small, West Linton	do.		1	0	0
	Jas. Inch, W. Deans	do.		0	10	0
			Carry forward,	£361	13	6

* Half Premiums awarded, the number of Lots being under five.

NAME OF DIST.	PREMIUM AWARDED TO	FOR		AMOUNT.		
			Brought forward,	£361	13	6
East Dist. of Stirlingshire	William Ure, Bogton	One-year old Colt	£2 & Med. Sil. Med.	2	10	6
	James Webster, Mungall	do.		1	0	0
	William Ure, Bogton	do.		0	10	0
	George Waddell, Bonnyfield	Two-year old Filly	£3 & Med. Sil. Med.	3	10	6
	Mrs Swan, Midthorn	do.		2	0	0
	David Paul, South Kersie	do.		1	0	0
	George Ure, Wheatlands	One-year old Filly	£2 & Med. Sil. Med.	2	10	6
	Thomas Chalmers, Walton	do.		1	0	0
	William Ure, Bogton	do.		0	10	0

SHEEP.

NAME OF DIST.	PREMIUM AWARDED TO	FOR		AMOUNT.		
Islay, Jura, and Colonsay	Samuel Mitchell, Nereby	Blackfaced Tup	Silver Medal	0	16	0
	Samuel Mitchell, Nereby	do.	£3 & Med Sil. Med.	3	10	6
	A. & J Greenlees, Finlaggan	do.		1	0	0
	H. Stevenson, Laggan	do.		0	10	0
	Alexander M'Conechy, Daill	Blackfaced Shear. Tup	£3 & Med. Sil. Med.	3	10	6
	Alexander M'Conechy, Daill	do.		1	0	0
	A. & J. Greenlees, Finlaggan	do.		0	10	0*
	Samuel Mitchell, Nereby	Blackfaced Ewes	£1, 10s. & Med. Sil. Med.	2	0	6*
	A. & J. Greenlees, Finlaggan	do.		0	10	0*
	Samuel Mitchell, Nereby	do.		0	5	0
	Alexander M'Conechy, Daill	Blackfaced Gimmers	£3 & Med. Sil. Med.	3	10	6
	Alexander M'Conechy, Daill	do.		1	0	0
	Samuel Mitchell, Nereby	do.		0	10	0
Dunoon	Archibald Clark, Inverchapple	Blackfaced Tup	£3 & Med. Sil. Med.	3	10	6
	Duncan C. Whyte, Ballimore	do.		1	0	0
	James Duncan of Blairmore	do.		0	10	0
	James Duncan of Blairmore	Blackfaced Shear. Tup	£3 & Med. Sil. Med.	3	10	6
	James Duncan of Ballimore	do.		1	0	0
	Archibald Clark, Inverchapple	do.		0	10	0*
	James Duncan of Blairmore	Blackfaced Ewes	£1, 10s. & Med. Sil. Med.	2	0	6*
	D. Wood, Benmore	do.		0	10	0*
	Archibald Clark, Inverchapple	do.		0	5	0
	James Duncan of Ballimore	Blackfaced Gimmers	£3 & Med. Sil. Med.	3	10	6
	James Duncan of Blairmore	do.		1	0	0
	Archibald Clark, Inverchapple	do.		0	10	0
Dalkeith	Duke of Buccleuch	Leicester Tup	£3 & Med. Sil. Med.	3	10	6
	William Wilson, Wolfstar	do.		1	0	0
	John Edgar, Kirkettle	do.		0	10	0
	Duke of Buccleuch	Leicester Shear. Tup	£3 & Med. Sil. Med.	3	10	6
	William Wilson, Wolfstar	do.		1	0	0
	Duke of Buccleuch	do.		0	10	0
	Duke of Buccleuch	Leicester Ewes	£3 & Med. Sil. Med.	3	10	6
	William Ford, Fentonbarns	do.		1	0	0
	Richard Paterson, Langside	do.		0	10	0
	Duke of Buccleuch	Leicester Gimmers,	£3 & Med. Sil. Med.	3	10	6
	William Ford, Fentonbarns	do.		1	0	0
	William Wilson, Wolfstar	do.		0	10	0
Upper Ward of Lanarkshire	James Greenshields, West Town	Blackfaced Tup	Silver Medal	0	16	0
	James J. Gillespie, Parkhall	do.	£3 & Med. Sil. Med.	3	10	6
	William White, Nisbet	do.		1	0	0
	James Greenshields, West Town	do.		0	10	0
	James J. Gillespie, Parkhall	Blackfaced Shear. Tup	£3 & Med. Sil. Med.	3	10	6
	Robert Watson, Culteraliers	do.		1	0	0
	William White, Nisbet	do.		0	10	0
	Alex. Williamson, Strancleugh	Blackfaced Ewes	£3 & Med. Sil. Med.	3	10	6
	James Paton, Glencaple	do.		1	0	0
	Alex. Williamson, Strancleuch	do.		0	10	0
	Mrs Tweedie, Castle Crawford	Blackfaced Gimmers	£3 & Med. Sil. Med.	3	10	6
	Ebenezer Ritchie, Stonehill	do.		1	0	0
	Mrs Tweedie, Castle Crawford	do.		0	10	0
			Carry forward,	£453	15	0

* Half Premiums awarded, the number of Lots being under five.

NAME OF DIST.	PREMIUM AWARDED TO	FOR		AMOUNT.		
			Brought forward,	£453	15	0
Lochaber	H. E. Cameron, Clunes	Blackfaced Tup	£3 & Med. Sil Med.	3	10	6
	D. & J. Sinclair, Achantee	do.		1	0	0
	A. D. Anderson of Ardsheal	do.		0	10	0
	D & J. Sinclair, Achantee	Blackfaced Shear. Tup	£3 & Med. Sil. Med.	3	10	6
	D. P. M'Donald, Invernevis	do.		1	0	0
	Lord Abinger	do		0	10	0
	D. P. M'Donald, Invernevis	Blackfaced Ewes	£3 & Med. Sil. Med.	3	10	6
	D. P. M'Donald, Invernevis	do.		1	0	0
	D. & J. Sinclair, Achantee	do.		0	10	0
	D. & J. Sinclair, Achantee	Blackfaced Gimmers	£3 & Med. Sil. Med.	3	10	6
	D. & J. Sinclair, Achantee	do.		1	0	0
	Lord Abinger	do.		0	10	0
County of Forfar	Earl of Dalhousie	Leicester Tup	£3 & Med. Sil. Med.	3	10	6
	Chas. Lyall, Old Montrose	do.		1	0	0
	George Cowe, Balhousie	do.		0	10	0
	Alex. Crawford, East Hillhead	Leicester Shear. Tup	£3 & Med. Sil Med	3	10	6
	Earl of Dalhousie	do.		1	0	0
	Alex. Crawford, East Hillhead	do.		0	10	0
	John Taylor, Redcastle	Leicester Ewes	£3 & Med. Sil Med.	3	10	6
	John Taylor, Redcastle	do.		1	0	0
	Charles Mitchell, Kintrockat	do.		0	10	0
	Alex. Crawford, East Hillhead	Leicester Gimmers	£3 & Med Sil. Med.	3	10	6
	Earl of Dalhousie	do.		1	0	0
	Chas. Lyall, Old Montrose	do.		0	10	0
County of Caithness	Thomas Adam of Lynegar	Leicester Tup	£3 & Med. Sil. Med.	3	10	6
	William Purves, Thurdistoft	do.		1	0	0
	Alex. Henderson of Stemster	do.		0	10	0
	William Purves, Thurdistoft	Leicester Shear. Tup	£3 & Med. Sil. Med.	3	10	6
	William Purves, Thurdistoft	do.		1	0	0
	Thomas Adam of Lynegar	do.		0	10	0
	Thomas Adam of Lynegar	Leicester Ewes	£3 & Med. Sil. Med.	3	10	6
	William Purves, Thurdistoft	do.		1	0	0
	William Purves, Thurdistoft	do.		0	10	0
Border Union	John Robson, Newton	Cheviot Tup	Med. Silver Medal	0	10	6
	Thomas Clark, Oldhamstocks	Border Leicester S. Tup	Med. Silver Medal	0	10	6
	John Robson, Newton	Cheviot Ewes	Med. Silver Medal	0	10	6
	Thomas Clark, Oldhamstocks	Border Leicester Gmrs.	Med. Silver Medal	0	10	6
Athole and Weem	P. & D. Ferguson, Dalcapon	Leicester Tup	Silver Medal	0	16	0
	P. & D. Ferguson, Dalcapon	do.	Med. Silver Medal	0	10	6
	P. & D. Ferguson, Dalcapon	Reicester Shearling Tup	Med. Silver Medal	0	10	6
	A. Conacher, Aldour	Leicester Ewes	Med. Silver Medal	0	10	6
	P. & D. Ferguson, Dalcapon	Leicester Gimmers	Med. Silver Medal	0	10	6
Nether Lorn	Robert Allan, Glenmore	Blackfaced Tup	Silver Medal	0	16	0
	Robert Allan, Glenmore	do.	Med. Silver Medal	0	10	6
	Robert Allan, Glenmore	Blackfaced Shear. Tup	Med. Silver Medal	0	10	6
	Robert Allan, Glenmore	Blackfaced Ewes	Med. Silver Medal	0	10	6
	Robert Allan, Glenmore	Blackfaced Gimmers	Med. Silver Medal	0	10	6
United East Lothian	A. J. Balfour of Whittinghame,	Border Leicester Tup	Med. Silver Medal	0	10	6
	William Wilson, Wolfstar	do. Shear. Tup	Med. Silver Medal	0	10	6
	Adam Smith, Stevenson Mains	Border Leicester Ewes	Med. Silver Medal	0	10	6
	William Wilson, Wolfstar	Border Leicester Gimrs.	Med. Silver Medal	0	10	6
Argyll	R. Allan, Glenmore	Blackfaced Tup	Silver Medal	0	16	0
	R. Allan, Glenmore	do.	Med. Silver Medal	0	10	6
	R. Allan, Glenmore	Blackfaced Shear. Tup	Med. Silver Medal	0	10	6
	R. Allan, Glenmore	Blackfaced Ewes	Med. Silver Medal	0	10	6
	A. Sinclair, Upper Largie	Blackfaced Gimmers	Med. Silver Medal	0	10	6
				£521	18	6

SPECIAL GRANTS.

NAME OF DIST.	MEDAL AWARDED TO	FOR			AMOUNT.
Glasgow Agricultural Society	Vote in aid of Premiums, ...				£50 0 0
Ayrshire Association	Vote to Dairy Produce at Kilmarnock, . . .				20 0 0
Edinburgh Agricultural Association	Vote in aid of Premiums, ...				20 0 0
Joint Show at Inverness	Vote in aid of Premiums, . . .			£20 0 0	
	James Mackessack, Earnside	Horses	Med. Sil. Med.	0 10 6	
	Sir G. Macpherson Grant, Bart., M.P.,	Cattle	Med Sil. Med.	0 10 6	
	Peter Robertson, Achilty	Sheep	Med. Sil. Med.	0 10 6	
	Mrs Sutor, The Collie	Poultry	Med. Sil. Med.	0 10 6	
	Sir Kenneth S. Mackenzie, Bart. } equal	Swine	Med. Sil. Med.	0 10 6	
	C. A. Hanbury of Strathfarre } equal	Swine	Med. Sil. Med.	0 10 6	
	Alex. Fraser, Croy	Best entry in Crofter Class	Med. Sil. Med.	0 10 6	
					23 13 6
Unst Agricultural Society	Vote in aid of Premiums, ...				3 0 0
					£116 13 6

MEDALS IN AID OF PREMIUMS GIVEN BY LOCAL SOCIETIES.

Medium Silver Medals were awarded to the following:—

ABERDEENSHIRE.

NAME OF DISTRICT.	MEDAL AWARDED TO	FOR
Auchindoir, Kildrummie, and Towie	George Cran, Morlich	Polled Bull
	George Cran, Morlich	Polled Cow
	Alex. Bruce, Mid Clova	Polled Heifer
	Alex. Bruce, Mid Clova	Polled Heifer
Cluny, Monymusk, and Midmar	Alexander Dewar, Bethlen	Shorthorn Bull
	James Forbes, Woodend	Leicester Ewes
Cromar, Upper Dee, and Donside	Robert Anderson, Daugh	Polled Bull
	Robert Anderson, Daugh	Polled Cow
	Charles Strachan, Tillyorn	Shorthorn Bull
	Charles Strachan, Tillyorn	Shorthorn Cow
Ebriesdie	George Johnston, Loanhead	Shorthorn Bull
	William Balfour, Blackpots	Polled Bull
	John Wilkin, Littletack	Draught Filly
	Robert Kilgour, jun., Ardlin	Leicester Tup
	Mrs Robert Melvin, Milltown of Drumwhindle	Cured Butter
Formartine	George Moir, Knockhall	Swedes
	Mrs Ruxton, Hill of Fiddes	Potatoes
Fyvie	James Mackie, Lewes of Fyvie	Polled Cow
	James Durno, Jackstown	Draught Mare
Inverurie	George Reid, Clinterty	Polled Bull
	A. F. Nares, Brucktor	Shorthorn Bull
Garioch	John Maitland, East Balhalgardy	Swedish Turnips
	Henry Gordon of Manar	Green Topped Yellow Turnips
Kinellar	James Mitchell, Caisemill	Coop of Poultry
Kinnethmont	Peter Bruce, Myreton	Shorthorn Bull
	William Mitchell, Auchnagathle	Shorthorn Cow
	John Stewart, Auchindellan	Polled Bull
	Alex. Roy, Waterton	Draught Filly
	Mrs Wright, Kirkhill	Cured Butter
Leochel Cushnie	R. C. Auld, Bridgend	Polled Bull
	Alex. Dunn, Wester Corse	Polled Heifer
Mar	William M'Combie of Easter Skene	Polled Heifer
	Silvester Campbell, Kinnellar	Shorthorn Cow
New Aberdour	Jas. Milne, Netherton	Polled Bull
	George Bruce, Pennan	Shorthorn Cow
	Alexander Whyte, South Whitewell	Brood Mare
	Robert Chapman, Powkburn	Collection of Roots
	Jas. Brown, Crovie	Collection of Seeds

ABERDEENSHIRE—*continued.*

NAME OF DISTRICT.	MEDAL AWARDED TO	FOR
North-East Aberdeenshire	Robert Brebner, Lumbs	Shorthorn Bull
	James Beedie, Ardlaw Mains	Polled Cow
	William Minty, Tyacksnook	Draught Mare
	Mrs Fowlie, Memsie	Dairy Produce
	Alex. Smith, Boghead	Sample of Seeds
	James Milne, Netherton	Collection of Roots
North of Scotland	J. P. Gordon of Cairnfield	Turnips
	A. Forbes, Balvack	Potatoes
Strichen	George Alex. Baird of Strichen	Polled Bull
	George Alex. Baird of Strichen	Polled Cow

ARGYLLSHIRE.

NAME OF DISTRICT.	MEDAL AWARDED TO	FOR
Kintyre	James M. Hall of Killean	Ayrshire Bull
	John Gemmell, Dalrioch	Ayrshire Cow
	David M'Gibbon, Ard-na-Craig	Clydesdale Mare
	Duke of Argyll, K.T.	Blackfaced Tup
Mull, Coll, and Tiree	H. H. Pitcairn of Tiroran	Highland Heifer
	W. M. Malcolm, Auchnacraig	Draught Mare
	J. & A. M'Kill, Erray	Blackfaced Tup
	Walter Elliot, Laggan	Cheviot Tup

AYRSHIRE.

NAME OF DISTRICT.	MEDAL AWARDED TO	FOR
Beith	John Parker, Roughwood	Ayrshire Bull
	J. & H. Peebles, Bogstone	Ayrshire Cow
Coylton and Stair	Peter Conner, Drumdow	Ayrshire Cow
	David M'Connell, Sandhill	Clydesdale Mare
Craigie	Robert Drummond, Pocknave	Ayrshire Bull
	William Brown, Lodgebush	Ayrshire Cow
	James Picken, Laigh Langside	Clydesdale Mare
Dalry	John Donald, Highfield	Ayrshire Bull
	Gilbert Ferguson, Thirdpart	Ayrshire Cow
	Andrew Allan, Munnoch	Ayrshire Cow
	John Brown, Lissins Moss	Clydesdale Mare
Dundonald	Matthew Young, Broomhill	Ayrshire Bull
	Samuel Young, Newfield Mains	Ayrshire Cow
	Robert Hutchison, Craiksland	Clydesdale Mare
Galston	J. & H. White, Wraise	Sweet Milk Cheese
	George Torrance, Dyke	Cured Butter
	Thomas Maxwell, Cessnock	Collection of Roots
Kilmarnock	William Bartlemore, Netherhouses	Ayrshire Bull
	John Jardine, Kilmarnock	Ayrshire Cow
	Thomas Lindsay, Townend	Clydesdale Stallion
	Lawrence Drew, Merryton	Clydesdale Mare
Loudoun & Lanfine	Thos. Donald, Parkerston	Ayrshire Bull
	Alexander Steel, Burnhead	Ayrshire Cow
	George Alston, Loudounhill	Clydesdale Mare
	James Mitchell, Cairnhill	Leicester Tup
Muirkirk	R. & P. Wardrop, Garlaff	Ayrshire Bull
	John Semple, Mid Wellwood	Ayrshire Cow
	Daniel Hyslop, Belston	Clydesdale Mare
	D. C. Miller, Bridgehouse	Clydesdale Gelding
	Wm. Forest, Auldhouseburn	Blackfaced Tup
	James Craig, Middlefield	Blackfaced Tup
New Cumnock	R. & P. Wardrop, Garlaff	Ayrshire Bull
	David Weir, Braehead	Ayrshire Cow
	William Kerr, Marshallmark	Brood Mare
	James Craig, of Craigdarroch	Blackfaced Tup
Sorn and Dalgain	John Reston, Holehousehillhead	Ayrshire Bull
	William Weir, Westown	Ayrshire Cow
	Francis Weir, Blackside	Daught Mare
	Thomas Baird, South Blairkip	Cheese
	John Watson, Daldorch	Hedges
Tarbolton	Hugh Wilson, Carngillan	Ayrshire Cow
	Jas. Mair, Townhead	Clydesdale Mare

AYRSHIRE—*continued.*

NAME OF DISTRICT.	MEDAL AWARDED TO	FOR
West Kilbride	George Harvey, Gill	Ayrshire Bull
	John Hendry, Mains	Ayrshire Cow
	Jas. Dunlop, Hunterston	Draught Mare
	Miss G. Crawfurd of Auchenames	Cured Butter
	John Montgomery, Meadowhead	Cheese

BUTESHIRE.

Bute	Hugh Duncan, Langalchorad	Ayrshire Cow
	Robert M'Alister, Ascog	Ayrshire Heifer
	Archd. Lamont, Stuck	Blackfaced Tup

DUMBARTONSHIRE.

Kirkintilloch	Barony Parochial Board	Ayrshire Cow
	Andrew Hoggan, jun., Busby	Ayrshire Cow
	George Graham, Easterboard	Clydesdale Entire Colt
	Colin Campbell, Glasgow	Draught Gelding
Western District of Dumbartonshire	Duncan M'Farlane, Strone	Blackfaced Tup
	Duncan M'Farlane, Strone	Blackfaced Ewes

DUMFRIESSHIRE.

Sanquhar	Duke of Buccleuch and Queensberry, K.G.	Ayrshire Bull
	Duke of Buccleuch and Queensberry, K.G.	Ayrshire Cow
	Thomas Keir, Whitehill	Clydesdale Mare
	William Hyslop, Clenries	Cheviot Tup
	George Lorimer, Rigg	Blackfaced Tup

EDINBURGHSHIRE.

Western District of Mid-Lothian	John Meikle, Grougfoot	Ayrshire Bull
	John Meikle, Grougfoot	Ayrshire Heifer
	Gavin Jack, North Gyle	Clydesdale Gelding
	John Waddell of Inch	Clydesdale Mare
	Thomas Aitken, Listonshiels	Blackfaced Tup
	James Hamilton, Woolfords	Blackfaced Ewes

ELGINSHIRE.

Forres and Northern Fat Show Club	Richard H. Harris, Earnhill	Cross Ox
	Thomas Ross, Hillhead	Polled Heifer
	Mrs Phœbe Dunbar Dunbar of Seapark	Cross-bred Wethers
	Duke of Richmond and Gordon, K.G.	Pig
	Mrs Anton, Seafield	Collection of Roots
	Thomas Ross, Hillhead	Collection of Seeds

FIFESHIRE.

Windy-gates	John Balfour of Balbirnie	Shorthorn Bull
	R. C Munro Ferguson of Raith and Novar	Draught Mare

INVERNESS-SHIRE.

Northern Counties Fat Show Club	John Cran, Kirkton	Cross Ox
	Duke of Sutherland	Highland Heifer
	Earl of Seafield	Cross Wethers
	Sir K. S. Mackenzie of Gairloch, Bart.	Pigs
	John Cran, Keith	Poultry
	James A. Gordon of Arabella	Potatoes
Strathspey	Alexr. Mann, Ballintomb	Polled Bull
	Alexr. Mann, Ballintomb	Polled Heifer
	Alex. Grant, Ballinlaggan	Draught Mare

KINCARDINESHIRE.

Fettercairn	John Smith, Balmain	Shorthorn Bull
	James Smith, Pittengardner	Brood Mare
	John Smith, Balmain	Collection of Roots

NAME OF DISTRICT	MEDAL AWARDED TO	FOR
	LANARKSHIRE.	
Cadder	Barony Parochial Board	Ayrshire Cow
	James Johnstone, Lochburnie	Clydesdale Mare
Calderwaterhead	John Williamson, Westfield	Ayrshire Cow
	Robert Walker, Tippethill	Clydesdale Entire Colt
Stonehouse	John Hamilton, Bogside	Ayrshire Bull
	William Hamilton, Kittymuir	Ayrshire Cow
	ORKNEY.	
Rousay	John Gibson, Sangskail	Leicester Tup
	James Kirkness, Quoys	Green Crop
	PERTHSHIRE.	
Culross	James Thomson, Middle Grange	Hay Crop
	David Aitken, Carnock Mill	Green Crop
	John M'Laren, Balgownie Mains	Farm Management
M. Dist of Athole and Tullymet	Duncan Menzies, Ballnamoan	Green Crop
Moulin	William Stewart, Auchlat	Green Crop
Stormont Union	Thomas Ferguson, Kinnochtry	Polled Cow
	A. Bruce, Jordanstone	Draught Mare
	W. S. Ferguson, Pictstonshill	Leicester Tup
	James Sidy, Bridge Farm	Green Crop
	Mrs Mathieson, Meikleour	Dairy Produce
	RENFREWSHIRE.	
Eaglesham	James Stewart, Carrot	Ayrshire Cow
Lochwinnoch	Peter Skeoch, Boydstone	Ayrshire Bull
	David Kerr, Park Farm	Ayrshire Cow
	ROSS-SHIRE.	
Black Isle	James A. Gordon of Arrabella	Shorthorn Bull
	D. M. Ross, yr. of Cromarty	Clydesdale Mare
	Duncan Cameron, Fettes	Leicester Tup
	C. M. Cameron, Balnakyle	Chevalier Barley
	C. Munro, Weston	Sandy Oats
	STIRLINGSHIRE.	
Campsie, Strathblane, and Baldernock	James Weir, Hole Walter Lyon, Balquharrage	Ayrshire Bull Clydesdale Mare
Kilsyth	James-Patrick, Queenzieburn	Ayrshire Cow
	James Graham, Auchencloch	Clydesdale Mare

173 Medium Silver Medals, £90, 16s. 6d.

PLOUGHING COMPETITIONS.

In 1881–82 the Society's Silver Medal was awarded at 152 Ploughing Competitions as follows:—

ABERDEENSHIRE.

NO.	NAME OF SOCIETY.	PLACE OF COMPETITION.	SILVER MEDAL AWARDED TO
1.	Aboyne.	Mains of Aboyne.	James Esson, Mill of Dess.
2.	Alford.	Greystone.	James Duncan, Cairnballoch.*
3.	Buchan (Fraserburgh District).	Kinninmonth Home Farm.	Alexander Turriff, Strichen Mains.
4	Buchan (Deer District).	Nether Aden.	James Beaton, Petty Marcus.
5.	Cairnie.	Smallburn.	Charles Milne, Corse of Kinnoir
6.	Corgarff.	Bridgend of Allargue.	James Coutts, Dubreck.
7.	Countesswells.	South Lasts.	James Dunbar, Colthill.
8.	Crathie.	Invergelder.	George Wisely, Invergelder.

ABERDEENSHIRE—*continued.*

NO.	NAME OF SOCIETY.	PLACE OF COMPETITION.	SILVER MEDAL AWARDED TO
9.	Echt, Skene, and Midmar.	Upper Mains.	Alexander Webster, Fillyoch.
10.	Glen-Muick.	Brackly.	Alex. K. Ross, Invercauld Arms.
11.	Kildrummie, Towie, &c.	Newton of Brux.	William Law, Chapel of Towie.
12.	Leochel-Cushnie.	Wester Fowlis.	Alexander Strachan, Wester Fowlis.
13.	Millbrex.	Burnend.	William Watt, Burnside of Gight.
14.	New Machar.	Greens.	James Philip, Waulkmill.
15.	Newhills and Dyce.	Springhill.	William Dawson, Walton.
16.	North-East Aberdeenshire.	Claystiles.	John Mowat, Auchiries.
17.	Strathbogie.	Wellheads.	Alexander Allan, Ardonald.
18.	Strichen.	Middlethird	William Lawrence, Hillfoot.

ARGYLLSHIRE.

19.	Duror and Ballachullish.	Kiel.	Alexander Rowan, Dalnatraid.
20.	Islay, Jura, and Colonsay.	Bridgend.	Robert M'Lellan, Eorabus.
21.	Kilfinan.	Kames.	Duncan Morrison, Corra.
22.	Kintyre.	Pennygowan.	James M'Aulay, Killocnan.
23.	Lismore.	Ballieveolan.	John M'Corquodale, Point.
24.	Lorn.	Dunstaffnage.	John M'Niven, Dunollybeg.
25.	Strath of Appin.	Kinlochlaich.	John M'Coll, Rugarbh.

AYRSHIRE.

26.	Ayr and Alloway.	South Corton.	John Hutton, Corton.
27.	Coylton.	Broadwood.	James Weir, Highpark.
28.	Dalry.	Ryesholm.	Hugh Brown, Lyleston.
29.	Dalrymple.	Dustyhill.	William Richmond, Laigh Grange.
30.	Fenwick.	Tannacrief.	William Wright, Marchbank.
31.	Galston.	Little Sorn.	William Drummond, Fairwells.
32.	Kilmarnock.	Annandale.	John Paton, Holmes.
33.	Kirkmichael.	Glenside.	William Richmond, Laigh Grange.
34.	Minnishant.	Brae.	George Shankland, Brackenbrae.
35.	Monkton.	Aikenbrae.	George M'Canse, Orangefield.
36.	Sorn and Dalgain.	Hillhead of Sorn.	Robert Brown, jun., Dalgain.
37.	Stewarton.	Castleton.	Matthew Steel, Kilbride.
38.	Straiton.	Craig.	James Neil, Dalmorton.
39.	Tarbolton.	Bennals.	Hugh Ferguson, Clune.

BANFFSHIRE.

40.	Aberlour.	Delmore.	Alexander M'Kenzie, Kinermony.
41.	Ballindalloch.	Weiroch.	Alexander Forbes, Dalgarvan.
42.	Braes of Glenlivet.	Clashmore.	George Innes, Easterton.
43.	Glenrinnes.	Tomnagyloch.	Forbes Tough, Recletich.
44.	Keith.	Maislie.	James Weir, Tarmore.

BERWICKSHIRE.

45.	Cockburnspath.	Blackburn.	William Telford, Neuk.
46	Lammermoor.	Knock.	James Skeldon, Hillend.

BUTE AND ARRAN.

47.	Arran.	Clauchlands.	Charles Cook, Forlin.

CAITHNESS-SHIRE.

48.	Caithness.	Quoys of Reiss.	Wm. Macdonald, Lower Reiss.

CLACKMANNANSHIRE.

49.	Clackmannanshire Union.	Ballicarty.	William Beveridge, Harviestoun.

CROMARTYSHIRE.

50	Cromarty.	Newton.	Hugh Graham, Bannans.

DUMBARTONSHIRE.

51.	Kilmaronock and Bonhill.	Gartacharn.	James Miller, Cameron.
52.	Kirkintilloch.	Haystone.	Alexander M'Donald.

DUMFRIESSHIRE.

NO.	NAME OF SOCIETY.	PLACE OF COMPETITION.	SILVER MEDAL AWARDED TO
53.	Glencairn.	Castlehill.	James Hasting, Castlehill.
54.	Holywood.	Newtonrigg.	Thos. Johnston, Muirside.
55.	Kirkconnel and Sanquhar.	Nether Farding.	Donald M'Callum, Kelloside.
56.	Penpont.	Cairn Mill.	Samuel Carruthers, Holestane.
57.	Westerkirk.	Midknock.	Alexander Murray, Bailliehill.

EDINBURGHSHIRE.

58.	Glencross.	Crosshouse.	Thomas Peden, Easter Bush.
59.	Lasswade.	Roslin.	Thomas White, Whitehill Mains
60.	West Calder.	Harwood.	William Greenhorn, Falla Mill.

ELGINSHIRE.

61.	Boharm.	Stoneytown.	James Stewart, Cullieshamyan.
62.	Morayshire.	Easter Manbeen.	D. M'Donald, Ardersier.
63.	Spey, Avon, and Fiddochside (1881).	Dandaleith.	Alexander M'Kenzie, Kinermony.
64.	Urquhart.	Corskie.	Charles Keil, Stonewells.
65.	Western District of Elgin.	Boggs of Mayne.	James Clark, Oldmills.

FIFESHIRE.

66.	Crossgates.	Sheephousewell.	Robert Donaldson, Pitcorthie.
67.	East of Fife.	Blacklaws.	Thomas Arnot, Clephanton.
68.	Leslie.	Westertown.	Thomas Cuthbert, Auchmuty.

FORFARSHIRE.

69.	Isla.	Park.	James Carr, Kinkeadly.
70.	Kirriemuir.	Scobshaugh.	James Macintosh, Kinordy.
71.	Mains, Strathmartine, &c.	Magdalenes.	Thomas Smeaton, Baldragon.
72.	Tannadice and Oathlaw.	Barnyards.	George Kennie, Balgillo.

INVERNESS-SHIRE.

73.	Badenoch and Rothiemurchus.	Banchor.	Lachlan M'Pherson, Balgown.
74.	Duthill.	Easter Gallovie.	James Allan, Duthil.
75.	Glen Urquhart (1881).	Allanmore.	Roderick White, Drumbuie.
76.	Glen Urquhart.	Durmbuie.	Roderick White, Drumbuie.
77.	Laggan.	Achmore.	Lachlan M'Pherson, Balgown.
78.	Lochaber.	Keppoch.	Archibald M'Coll, Glennevis.
79.	Lochabar and Ardgour.	Inchree.	Donald Cameron, Glenshealoch
80.	Strathdearn.	Tomatinard.	Donald M'Kay, Moy Hall.
81.	Stratherrick.	Gorthlick.	Norman M'Kenzie, Gorthlick.
82.	Strathnairn (Western District).	Mains of Farr.	Donald Gordon, Scatraig.

KINCARDINESHIRE.

83.	Durris.	Milltown.	William Allan, West Mulloch.
84.	Logie Pert.	Forebank.	William Brown, Forebank.
85.	Maryculter.	Millbank.	Joseph Middleton, Sunnyside.
86.	Portlethen.	Causeyport.	James Wood, Mains of Findon.
87.	Rickarton, Urie and Fetteresso.	Tewel.	Alexander Ironside, South Glenton.

STEWARTRY OF KIRKCUDBRIGHT.

88.	Kirkpatrick-Durham.	Tarbreoch.	James M'Naught, Lairdlaugh.
89.	New Abbey.	Landis.	David Young, Airds.
90.	Penninghame, &c.	Barholm Mains.	Alexander M'Gowan, Upper Barr.
91.	Troqueer.	Nethertown.	John M'Gregor, Pleasance.

LANARKSHIRE.

92.	Cadder.	Milton.	Walter Stewart, Buckley.
93.	Calderwaterhead.	Blairhead.	Andrew Barrie, Woodhall.
94.	Crawford and Crawfordjohn.	Overabington.	George Tweedie, Strancleugh.
95.	New Monkland.	Rochsolloch.	John Hunter, Dykehead.
96.	New Monkland (open).	Rochsolloch.	John Hunter, Dykehead.
97.	Old Monkland.	Kirkwood.	Hugh Cameron, Lochwood.

LINLITHGOWSHIRE.

NO.	NAME OF SOCIETY.	PLACE OF COMPETITION.	SILVER MEDAL AWARDED TO
98.	Blackburn.	Dales.	John Robertson, Easter Inch.
99.	Kinneil.	Kinneil Kerse.	John Jackson, Kinneil Mills.

NAIRNSHIRE.

100.	Ardclach.	Mid Fleenas.	Alexander M'Donald, Belivat.
101.	Nairnshire.	Greishop.	Robert Smith, Inschoch.

ORKNEY.

102.	Egilshay.	How.	Alexander Greive, How.
103.	Evie and Rendall.	Graven.	William Stickler, Burgar.
104.	Orkney.	Hobbister.	William Groundwater, Swanbister.
105.	Orphir.	Kirbister.	Alexander Winnock, Hobbister.
106.	Rousay and Veira.	Westness.	Allan Gibson, Scockness
107.	St Andrews	Hall of Tankerness.	William Eunson, Whiteclett.
108.	St Ola.	Sunnybank.	James Stevenson, Hillhead.
109.	Shapinshay.	Hilton.	James Foubister, Ness.
110.	South Ronaldshay.	Brecks.	James Annal, Farewell.
111.	Stronsay.	Holland.	Peter Twatt, Lodge.
112.	Viera.	Bu' Viera.	James Kent, Castlehall.
113.	West Mainland.	West Quoys.	Robert Cowper, East Quoys.

PEEBLESSHIRE.

114.	Eddleston Water.	Darnhall.	John Wilson, Hatton Knowe.
115.	West Linton and Newlands.	Noblehouse.	Thomas Hughes, Noblehouse.

PERTHSHIRE.

116.	Ardoch.	Harperstone.	John Duncan, Topfold.
117.	Arnprior.	Newburn.	Alexander Blair, Arnmore.
118.	Blairdrummond, &c.	Blackdub.	Robert Ferguson, Westwoodlane.
119.	Comrie.	Cowden.	David Kay, Tullybannocher.
120.	Culross.	Muirside.	William Stobbie, Aitkenhead.
121.	Drummond Castle.	Strageath Hall.	David Tainsh, Boreland.
122.	Foss and Strathtummel.	Foss Home Farm.	Charles Reid, Grenich.
123.	Glenalmond.	Francisfield.	John Morgan, South Buchanty.
124.	Glenlyon.	Innerwick.	Duncan Stewart, Broich.
125.	Kilmadock.	Inverardoch.	John Mackison, Hillhead.
126.	Logiealmond and Lyndoch.	Drumharrow.	James Williamson, Marybank.
127	Mid. District of Athole, &c.	Balnacraig.	Alexander Cameron, Dalnabo.
128.	Monzievaird and Strowan.	Carse of Trowan.	William M'Rostie, Carse of Lennoch.
129	Moulin.	Achlat.	John Stewart, Edradour.
130.	Port of Monteith.	Monteith Hotel Farm.	George Liddel, Ballabeg.
131.	Rannoch.	Lassintulloch.	John Menzies, Ardlarich.
132.	Strathbraan.	Tomnagairn.	James Forbes, Borlick.
133.	Strathearn (Central).	Innerdunning.	Robert Ewing, Chapel Bank.
134.	Strathord.	New Inn Farm.	W. Malcolm, Forkhill.
135.	Thornhill.	Spittalton.	James Mackison, Hillhead.
136.	Weem.	Castle Menzies.	William Paton, Rawer.

RENFREWSHIRE.

137.	Cathcart and Eastwood (open).	Eastwood Park.	Alexander Ferguson, East Park.
138.	Cathcart and Eastwood.	Eastwood Park.	Donald Russell, Hagbows.
139.	Erskine and Inchinnan.	Drumcross.	Arthur Watson, East Fulwood.
140.	Kilmalcolm and Port-Glasgow.	Milton.	David Taylor, Overwood.
141.	Renfrewshire.	East Glenshinnoch.	Arthur Watson, East Fulwood.
142.	Tarbat.	Bindal.	Alexander Bain, Seafield.

STIRLINGSHIRE.

143.	Baldernock.	Barnellan.	John Campbell, Longbank.
144.	Bannockburn, Plean, &c.	Woodcockfauld.	Thomas M'Farlane, Auchenbowie.
145.	Craigforth and Touch.	Whitehouse.	Chas. Sturt, West Carse.
146.	Eastern Dist. of Stirlingshire.	Powfoulis.	John Ritchie, Bellsdyke.
147.	Strath Endrick.	Clachanry.	John Stewart, Tombrake.

SUTHERLANDSHIRE.

NO.	NAME OF SOCIETY.	PLACE OF COMPETITION.	SILVER MEDAL AWARDED TO
148.	Lairg and Gruids.	Ballone.	Robert M'Kay, Laing.

WIGTOWNSHIRE.

NO.	NAME OF SOCIETY.	PLACE OF COMPETITION.	SILVER MEDAL AWARDED TO
149.	Kirkmaiden.	Nockencule.	Hugh Corkran, Auchneight.
150.	Machars.	Drumrae.	William Donnan, Sorbie.
151.	Old Luce.	Camrie.	William M'Culloch, Blackhill.
152.	Whithorn and Glasserton.	Dinnans.	George Paterson, Craigdhu.

152 Minor Silver Medals, £45, 12s.

IV.—COTTAGES AND GARDENS.

1. BEST KEPT COTTAGES AND GARDENS.

ARGYLLSHIRE.

Coll	James Smart	Cottage	£1 and Minor Silver Medal	£1	6	0
	Charles M'Fadyen	do.		0	10	0
	Donald Kennedy	do.	Minor Silver Medal	0	6	0
	Donald Kennedy	Garden	£1 and Minor Silver Medal	1	6	0
	Donald M'Kinnon	do.		0	10	0
	Allan M'Donald	do.	Minor Silver Medal	0	6	0

DUMBARTONSHIRE.

Cardross	Alex. Gibson	Cottage	£1 and Minor Silver Medal	1	6	0
	Andrew Jeffrey	do.		0	10	0
	James Cassels	do.	Minor Silver Medal	0	6	0
	John Keogh	Garden	£1 and Minor Silver Medal	1	6	0
	James Cassels	do.		0	10	0
	Peter M'Girvan	do.	Minor Silver Medal	0	6	0
	Alex Gibson (1*st in* 1881)	do.	Minor Silver Medal	0	6	0

EDINBURGHSHIRE.

Calder's Union	Alex. Purdie	Cottage		1	0	0
	Thomas Chapman	do.		0	10	0
	James Weir (1*st in* 1878)	do.	Minor Silver Medal	0	6	0
	Edward Blane(1*st in* 1880)	do.	Minor Silver Medal	0	6	0
	James B. Smith (1*st in* 1881)	do.	Minor Silver Medal	0	6	0
	Alex. Purdie	Garden		1	0	0
	Edward Blane (1*st in* 1879)	do.	Minor Silver Medal	0	6	0
	James Weir (1*st in* 1880)	do.	Minor Silver Medal	0	6	0
	James B. Smith (1*st in* 1881)	do.	Minor Silver Medal	0	6	0
Currie and Balerno	Robert Paterson	do.	£1 and Minor Silver Medal	1	6	0
	David Bishop	do.		0	10	0
	John Bookless	do.	Minor Silver Medal	0	6	0
	John Fraser (1*st in* 1881)	do.	Minor Silver Medal	0	6	0

FIFESHIRE

Newburgh	John Young	Cottage	£1 and Minor Silver Medal	1	6	0
	Robert Blyth	do.		0	10	0
	William Mitchell	do.	Minor Silver Medal	0	6	0
	Robert Blyth	Garden	£1 and Minor Silver Medal	1	6	0
	John Young	do.		0	10	0
	Robert Nairn	do.	Minor Silver Medal	0	6	0
			Carry forward,	£19	12	0

FIFESHIRE—*continued.*

			Brought forward,	£19	12	0
North of Fife	William Walker	Cottage		1	0	0
	John Thomson	do.		0	10	0
	William Archer	Garden	£1 and Minor Silver Medal	1	6	0
	Henry Balsillie	do		0	10	0
	David Donaldson	do.	Minor Silver Medal	0	6	0
	James Kinnell (*1st in* 1881)	do.	Minor Silver Medal	0	6	0

KINCARDINESHIRE.

Mearns	Mrs Hugh Florence	Cottage		1	0	0
	Mrs Alex. Bell	do.		0	10	0
	Mrs John Clark	do.	Minor Silver Medal	0	6	0
	George Douglas	Garden	£1 and Minor Silver Medal	1	6	0
	John Bruce	do.		0	10	0
	John Reid	do.	Minor Silver Medal	0	6	0
	John Ferguson (*1st in* 1881)	do.	Minor Silver Medal	0	6	0

LANARKSHIRE.

Abington	David M'Kendrick	Cottage		1	0	0
	M. M'Kendrick (*1st in* 1881)	do.	Minor Silver Medal	0	6	0
	James Thomson	Garden	£1 and Minor Silver Medal	1	6	0
	J. B. Forrest	do.		0	10	0
	M. M'Kendrick	do.	Minor Silver Medal	0	6	0
	Will. Clark (*1st in* 1881)	do.	Minor Silver Medal	0	6	0

LINLITHGOWSHIRE.

Dalmeny & Queensferry	Mrs Stein	Cottage	£1 and Minor Silver Meda	1	6	0
	Mrs Wilson	do.		0	10	0
	Mrs Lawrie	do.	Minor Silver Medal	0	6	0
	John Russell	Garden	£1 and Minor Silver Medal	1	6	0
	James Hunter	do.		0	10	0
	David Stein	do.	Minor Silver Medal	0	6	0
	And. Younger (*1st in* 1881)	do.	Minor Silver Medal	0	6	0
Torphichen	Robert Aitken	Cottage	£1 and Minor Silver Medal	1	6	0
	Walter White	do.		0	10	0
	Walter Carlyle	do.	Minor Silver Medal	0	6	0
	George Clelland	Garden	£1 and Minor Silver Medal	1	6	0
	Walter Carlyle	do.		0	10	0
	Henry Lowe	do.	Minor Silver Medal	0	6	0

PERTHSHIRE.

Braco	John Stewart	Cottage	£1 and Minor Silver Medal	1	6	0
	James Forbes	do.		0	10	0
	Robert Matthie	do.	Minor Silver Medal	0	6	0
	Dav. Monteath (*1st in* 1881)	do.	Minor Silver Medal	0	6	0
	James Forbes, jun.	Garden	£1 and Minor Silver Medal	1	6	0
	Arch. Bennett	do.		0	10	0
	Richard Kirkwood	do.	Minor Silver Medal	0	6	0
	Rob. Matthie (*1st in* 1881)	do.	Minor Silver Medal	0	6	0
Bridge of Earn	Andrew Geddes	Cottage	£1 and Minor Silver Medal	1	6	0
	David Smith	do.		0	10	0
	James Nairne	do.	Minor Silver Medal	0	6	0
	James Dobbie	Garden	£1 and Minor Silver Medal	1	6	0
	Andrew Geddes	do.		0	10	0
	David Smith	do.	Minor Silver Medal	0	6	0
Dunning	James Robertson	Cottage		1	0	0
	James Canning	do.		0	10	0
	Thos. Callum	do.	Minor Silver Medal	0	6	0
	John Callum	Garden	£1 and Minor Silver Medal	1	6	0
	Thos. Callum	do.		0	10	0
	James Canning	do.	Minor Silver Medal	0	6	0
	A. M'Martin (*1st in* 1881)	do.	Minor Silver Medal	0	6	0
			Carry forward,	£53	6	0

Ross-shire.

			Brought forward,	£53	6	0
Edderton	Hugh Mather	Cottage	£1 and Minor Silver Medal	1	6	0
	Donald Henry	do.		0	10	0
	John Hay	do.	Minor Silver Medal	0	6	0
	Hugh Mather	Garden	£1 and Minor Silver Medal	1	6	0
	Andrew Ross	do.		0	10	0
	Mrs M'Kenzie	do.	Minor Silver Medal	0	6	0
Wester Ross	Dun. Mackay	Cottage		1	0	0
	Donald Denoon	do.		0	10	0
	Donald Fraser	do.	Minor Silver Medal	0	6	0
	Hugh Morrison	Garden	£1 and Minor Silver Medal	1	6	0
	John Mackenzie	do.		0	10	0
	Colin Urquhart	do.	Minor Silver Medal	0	6	0
	David Munro (*1st in* 1881)	do.	Minor Silver Medal	0	6	0

Stirlingshire.

Killearn	Mrs Robb	Garden	£1 and Minor Silver Medal	1	6	0
	Wm. Gilfillan	do.		0	10	0
	George Cameron	do.	Minor Silver Medal	0	6	0
	James M'Nicol (*1st in* 1879)	do.	Minor Silver Medal	0	6	0

Wigtownshire.

Inch	John Gibb	Cottage	£1 and Minor Silver Medal	1	6	0
	Laurence Donnelly	do.		0	10	0
	Mrs Ross	do.	Minor Silver Medal	0	6	0
	Thom. Jess (*1st in* 1881)	do.	Minor Silver Medal	0	6	0
	John Carrol	Garden	£1 and Minor Silver Medal	1	6	0
	L. Donnelly	do.		0	10	0
	William Martin	do.	Minor Silver Medal	0	6	0
	Thom. Brown (*1st in* 1879)	do.	Minor Silver Medal	0	6	0
				£68	18	0

2. MEDALS FOR COTTAGES AND GARDENS AND GARDEN PRODUCE.

Medium Silver Medals were awarded to the following. –

Aberdeenshire.

Kinellar	Robert Donald	Garden
Udny	William Stables	Cottage
	William Stables	Garden

Ayrshire.

Galston	Robert Paterson	Vegetables
	William M'H. Hendrie	Cut Blooms

Dumbartonshire.

Vale of Leven and Dumbarton	James Miller, jun.	Garden
	James Miller, jun.	Flower Plot

Edinburghshire.

Liberton and Newton	George Gordon	Flower Plot
	David Cumming	Garden

Elginshire.

Dyke	John M'Intosh	Cottage
	John M'Intosh	Garden

Fifeshire.

Kirkcaldy	Henry Christie	Flower Plot
	Peter Stewart	Flower Plot

LANARKSHIRE.

Carnwath	Alex. Bryce	Garden Produce
	Alex. Lawrie	Garden
Gartsherrie	Alex. Dobbins	Cottage
	Thomas Johnston	Garden
Mauldslie and Rosebank	Robert Girdwood	Garden Produce
	Robert Girdwood	Flower Plot
New Victoria Gardens	Samuel Brooke	Garden Plot
	S. S. Eunson	Garden Plot
Saracen Public Gardens	Robert Moodie	Garden Plot
	Robert Grant	Vegetables
Shettleston	William Howat	Garden
	William Johnstone	Garden

LINLITHGOWSHIRE.

Kirkliston	John Smith	Garden

NAIRNSHIRE.

Auldearn	Mrs M'Kenzie	Garden

PERTHSHIRE.

Blairgowrie and Rattray	John M'Gregor	Garden
Breadalbane, Weem, &c.	James Fraser	Best kept Garden
	D. Macintosh	Best Cropped Garden
Cherrybank	Robert Munro	Cottage
	Robert Munro	Garden
Dunkeld and Birnam	Charles Fletcher	Garden
	Charles Fletcher	Vegetables
Logiealmond and Glenalmond	James Gorrie	Cottage
	John Simmie	Garden

36 Medium Silver Medals, £18, 18s.

V.—VETERINARY DEPARTMENT.

CLASS EXAMINATIONS—APRIL 1882.

DICK'S VETERINARY COLLEGE.

Christopher Jones,	Anatomy,	Silver Medal,	£0	16	0
Duncan M'Arthur,	Physiology,	Silver Medal,	0	16	0
Wm. John Welsley,	Chemistry,	Silver Medal,	0	16	0
John E. Tudor,	Materia Medica,	Silver Medal,	0	16	0
Arthur New,	Botany,	Silver Medal,	0	16	0
Thomas Horton,	Comparative Pathology,	Silver Medal,	0	16	0
Tom Harrison,	Veterinary Med. and Surgery,	Silver Medal,	0	16	0

NEW VETERINARY COLLEGE, EDINBURGH.

T. D. Connochie,	Horse Pathology,	Silver Medal,	0	16	0
J. F. Murray,	Cattle Pathology,	Silver Medal,	0	16	0
A. J. Haslam,	Chemistry,	Silver Medal,	0	16	0
R. J. Hickes,	Anatomy,	Silver Medal,	0	16	0
W. R. Davis,	Physiology,	Silver Medal,	0	16	0

GLASGOW VETERINARY COLLEGE.

Wm. A. MacGregor,	Horse Pathology,	Silver Medal,	0	16	0
Wm. A. MacGregor,	Cattle Pathology,	Silver Medal,	0	16	0
Tom Marriot,	Histology and Physiology,	Silver Medal,	0	16	0
James Laithwood,	Anatomy,	Silver Medal,	0	16	0
James Rodger,	Agriculture,	Silver Medal,	0	16	0
		Carry forward,	£13	12	0

SUMMER SESSION, 1882.

		Brought forward,	£13 12 0
Andrew Stewart,	Botany,	Silver Medal,	0 16 0
Andrew Stewart,	Materia Medica,	Silver Medal,	0 16 0
Alex. L. M'Millan,	Chemistry,	Silver Medal,	0 16 0
			£16 0 0

VI.—AGRICULTURAL CLASS, EDINBURGH UNIVERSITY.

1.	Henry Prain, Mains of Castle Huntly, Longforgan,	£5 0 0
2.	W. J. Thomson, Glasgow, R. P. Wright, Downan, Ballantrae, } equal, £2, 10s. each,	5 0 0
		£10 0 0

ABSTRACT OF PREMIUMS.

1.	Essays and Reports,		£77 11 0
2.	Glasgow Show, 1882,		2631 17 8
3.	District Shows:—		
	Stock,	£521 18 6	
	Special Grants,	116 13 6	
	Local Societies—Medals in aid of Premiums given by (173),	90 16 6	
	Ploughing Associations—Medals to (152),	45 12 0	775 0 6
4.	Cottages and Gardens—Money Premiums and 73 Minor Silver Medals, £68, 18s.; 36 Medium Silver Medals, £18, 18s.,		87 16 0
5.	Veterinary Department—Medals to Students,		16 0 0
6.	Agricultural Chair, Edinburgh University—Prizes to Class,		10 0 0
			£3598 5 2

STATE OF THE FUNDS

OF

THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND

At 30th NOVEMBER 1882.

I.	**Bonds—**		
	Heritable Bonds, ...		£12,779 16 0
	Debenture Bonds by Clyde Navigation Trustees, . .		6,450 0 0
	Railway Debenture Bonds, ...		2,000 0 0
			£21,229 16 0
II.	**Debenture Stock—**		
	£3,000 North British Railway Company, 4¼ per cent., at £108, 17s. 6d., . . .	£3,266 5 0	
	£2,727 Caledonian Railway Company, at 4 per cent., at £110, 5s., ...	£3,006 10 4	
	£1,000 London and North-Western Railway Company, at 4 per cent., at £116, 10s. .	1,165 0 0	7,437 15 4
III.	**Bank Stocks—**		
	£6,407, 7s. 8d. Royal Bank of Scotland, at £218, . . .	£13,968 1 11	
	2,218, 6s. 5d. Bank of England, at £289, .	6,410 18 11	
	2,000, 0s. 0d. British Linen Company Bank, at £310, . . .	6,200 0 0	
	1,250, 0s. 0d. National Bank of Scotland, at £310, . . .	3,875 0 0	
	1,080, 0s. 0d. Commercial Bank of Scotland, at £280, . . .	3,024 0 0	
	1,091, 13s. 4d. Bank of Scotland, at £313, .	3,416 18 4	36,894 19 2
	£14,047, 7s. 5d.		

Note.—The original cost of these Bank Stocks was £22,360, 19s. 6d., showing a profit, at present prices, of £14,533, 19s. 8d.

IV.	**Ten Shares (£500) of the British Fishery Society**, valued at	200 0 0
V.	**Arrears of Members' Subscriptions**, considered recoverable, .	63 3 0
		£65,825 13 6
	Deduct Balance due to Royal Bank on Current Account, .	2,559 7 7
	Amount of Funds, . . .	£63,266 5 11
VI.	**Building Fund—**	
	1. Estimated value of Building, No. 3 George IV. Bridge, .	£3,100 0 0
	2. Sum lent on Heritable Bond, ...	350 0 0
	3. Deposits with Royal Bank, £2,000 and £306, 3s. 10d., .	2,306 3 10
	Amount of Building Fund, .	£5,756 3 10
VII.	**Tweeddale Medal Fund—**	
	Debenture Bond with Caledonian Railway Company, . .	£500 0 0
VIII.	**Furniture—**	
	Estimated Value of Furniture, Paintings, Books, &c., . .	£1,000 0 0

W. S. WALKER, *Treasurer.*
ANTHONY MURRAY, *Convener of Finance Committee.*
J. TURNBULL SMITH, C.A., *Auditor.*

Edinburgh, *3rd January* 1883.

VIEW OF THE INCOME AND EXPENDITURE
For the Year 1881-82.

INCOME.

1.	**Annual Subscriptions and Arrears** received,		£775 0 6
2.	**Life Subscriptions** received,		1,009 12 0
			£1,784 12 6
3.	**Interests and Dividends** received—		
	Interests,	£1,042 8 0	
	Dividends,	1,601 9 10	
			2,643 17 10
4.	**Income from Building Fund,**		96 12 2
5.	**Chemical Department**—		
	Subscriptions,	£20 0 0	
	Experimental Station at Harelaw,	30 0 0	
			50 0 0
6.	**Arrears** from Stirling Show 1881,		7 0 0
7.	**Transactions.**—Sales by Messrs Blackwood,		11 9 4
8.	**Proceeds** of sale of New Stock of British Linen Co. Bank,		27 18 6
9.	**Balance of Receipts** from Glasgow Show, excluding Premiums paid,		2,052 7 8
	Sum of Income,		£6,673 18 0

EXPENDITURE.

1.	**Establishment**—			
	Salaries and Allowances,		£1,372 0 0	
	Feu Duty, Taxes, Coals, &c.,		154 16 7	
			£1,526 16 7	
2.	**Fee to Auditor** for 1880-81,		50 0 0	
3.	**Fee to Practical Engineer,**		20 0 0	
4.	**Agricultural Education** (including Bursaries and Fees to Examiners),		313 19 3	
5.	**Chemical Department,**		824 0 6	
6.	**Veterinary Department,**		42 5 0	
7.	**Expenses** in connection with Inquiry into Louping-ill and Braxy,		142 6 10	
8.	**Expenses** in connection with Stirling Show,		17 13 0	
9.	**Transactions,**		663 15 3	
10.	**Ordinary** Printing, Advertising, Stationery, Stamps, Bank Charges, and Telegrams, and Travelling Expenses in connection with Nomination of Directors,		218 13 4	
11.	**Subscriptions** to Public Societies,		25 0 0	
12.	**Miscellaneous,**		6 0 0	
13.	**Premiums**—			
	Stirling Show,	£318 10 0		
	Glasgow Show,	2,312 7 6		
	District Competitions,	548 7 6		
	Medals in aid of Premiums given by Local Societies,	100 16 0		
	Sums voted in aid of do.,	88 0 0		
	Cottages and Gardens,	78 7 6		
	Ploughing Competitions,	45 6 0		
			3,491 14 6	
14.	**Interest** on Overdraft on Royal Bank Current Account,		58 18 3	
	Sum of Expenditure,			7,401 2 6
	Balance of Expenditure,			£727 4 6

W. S. WALKER, *Treasurer.*
ANTHONY MURRAY, *Convener of Finance Committee.*
J. TURNBULL SMITH, C.A., *Auditor.*

Edinburgh, *3d January* 1883.

ABSTRACT of the ACCOUNTS of the HIGHLAND and

CHARGE.

1. **Deposit** with Royal Bank in name of Building Fund,			£209 11 8
2. **Arrears** of Annual Subscriptions at 30th Nov. 1881,		£78 0 6	
Whereof due by Members who have now compounded for life, and thereby extinguished,	£7 10 6		
Sum ordered to be struck off as irrecoverable,	37 8 0		
		44 18 6	
			33 2 0
3. **Arrears** from Stirling Show 1881,			7 0 0
4. **Interest and Dividends**—			
(1) Interest on Heritable Bonds, less Income-Tax,		£598 13 4	
(2) Interest on Debenture Bonds—			
On £4,450 at 4 per cent., less tax,		173 14 5	
(3) Interest on Debenture Stock—			
On £3,000 at 4½ per cent., less tax,	£124 9 0		
On £3,727 at 4 per cent., less tax,	145 11 3		
		270 0 3	
(4) Dividends on Bank Stock—			
£6,407, 7s. 8d. Royal Bank of Scotland,	£608 14 0		
2,218, 6s. 5d. Bank of England,	232 19 6		
2,000, 0s. 0d. British Linen Co. Bank,	280 0 0		
1,250, 0s. 0d. National Bank of Scotland,	187 10 0		
1,062, 10s. 0d. Commercial Bank,	140 8 0		
1,091, 13s. 4d. Bank of Scotland,	141 18 4		
		1,591 9 10	
(5) Dividend on 10 Shares British Fishery Society,		10 0 0	
			2,643 17 10
5. **Income** from Building Fund—			
Interest on Heritable Bond, £350,		£11 19 2	
Interest on Debenture Bonds, at 4 per cent., less tax,		78 1 8	
Interest on Deposits with Royal Bank, £5, 19s. 9d., and 11s. 7d.,		6 11 4	
			96 12 2
6. **Subscriptions**—			
Annual Subscriptions,		£846 7 0	
Life Subscriptions,		1,010 12 0	
			1,856 19 0
7. **Chemical Department**—			
Subscriptions,		£20 0 0	
Experimental Stations—Proceeds of Straw sold from Harelaw,		30 0 0	
			50 0 0
8. **Transactions.**—Proceeds of sales by Messrs Blackwood,			11 9 4
9. **Proceeds** of Sales of New Stock of British Linen Co. Bank,			27 18 6
10. **Heritable Bond**, paid up at Martinmas 1882,			4,000 0 0
11. **Balance** of Receipts from Glasgow Show (exclusive of Premiums paid), as shown in separate States,			2,052 7 8
12. **Balance** due to Royal Bank on current account, as at 30th November 1882,			2,559 7 7
Sum of Charge,			£13,548 5 9

Edinburgh, *3rd January* 1883.

AGRICULTURAL SOCIETY of SCOTLAND for the YEAR 1881-82.

DISCHARGE.

1. **Sum** due to Royal Bank on current account at 30th November 1881,			£1,692 9 11
2. **Establishment Expenses**—			
Salary to Secretary,		£850 0 0	
Salary to Clerk, £300, and Second Clerk, £150,		450 0 0	
Wages to Messenger,		72 0 0	
Feu-Duty, £28; Water Duty, £2, 3s. 4d.; Taxes, £31, 19s. 10d.,		62 3 2	
Coals, £9, 13s. 6d.; Gas, £6, 6s. 4d.; Insurance, £3, 17s. 6d.,		19 17 4	
Repairs and Furnishings,		72 16 1	
			1,526 16 7
3. **Fee** to Auditor for 1881 Accounts,			50 0 0
4. Allowance to Practical Engineer,			20 0 0
5. **Agricultural Education**—			
Grant to Professor of Agriculture, £150; Prizes, £10; Bursaries, £120; Fees to Examiners and Expenses, £33, 19s. 3d.,			313 19 3
6. **Chemical**—			
Salary and allowance to Chemist, £600, and Fees for Lectures, £8, 8s.,		£608 8 0	
Repairs, &c., for Laboratory,		85 5 0	
Experimental Stations—			
Harelaw—Rent, £30; Taxes, £1, 7s. 6d.; Superintendent's Allowance, £15, 15s.;	£47 2 6		
Pumpherston—Rent, £13; Superintendent's Allowance, £15, 15s.,	28 15 0		
		75 17 6	
Grants to Analytical Associations,		54 10 0	
			824 0 6
7. **Veterinary**—Allowance to Professor Williams, £26, 5s.; Medals to Students, £16,			42 5 0
8. **Expenses** in connection with Inquiry into Louping-ill and Braxy,			142 6 10
9. **Expenses** in connection with Stirling Show,			17 13 0
10. **Society's Transactions**—Printing, Binding, and Delivering, £477, 19s. 3d.; Essays and Reports, £185, 16s.,			663 15 3
11. **Ordinary** Printing and Lithographing, £71, 17s. 6d.; Advertising, £33, 7s. 5d.; Stationery and Books, £36, 18s.; Postages, &c., £48; Bank Charges and Telegrams, £9, 0s. 11d.; Travelling Expenses in connection with Nomination of Directors, £19, 9s. 6d.,			218 13 4
12. **Subscriptions** to Public Societies—Meteorological Society, £20; Society for Prevention of Cruelty to Animals, £5,			25 0 0
13. **Miscellaneous**—Reporting General Meeting, £3, 3s.; Luncheons for Directors, £1, 5s. 6d.; Handsel's, £1, 4s. 6d.; Restriking Medals, 7s.,			6 0 0
14. **Premiums**—			
Stirling Show 1881,		£318 10 0	
Glasgow Show 1882,		2312 7 6	
		£2,630 17 6	
District Competitions,	£548 7 6		
Medals in aid of Premiums given by Local Societies,	100 16 0		
Sums voted in aid of Premiums given by do.,	88 0 0		
Cottages and Gardens,	78 7 6		
Ploughing Competitions,	45 6 0		
		860 17 0	
			3,491 14 6
15. **Interest** on Overdraft on Current Account with Royal Bank for year to 30th November 1882,			58 18 3
16. **Price** of £17, 10s. Commercial Bank Stock purchased,			43 1 0
17. **Arrears** of Subscriptions struck off as irrecoverable,			42 5 6
18. **Arrears** considered recoverable,			63 3 0
19. **Deposit** with Royal Bank in name of Building Fund, Nov. 11, 1882,			306 3 10
20. **Sum** lent to Clyde Navigation Trust for 4 years, at 4 per cent., Nov. 11, 1882,			2,000 0 0
21. **Sum** Deposited with Royal Bank, November 11, 1882,			2,000 0 0
Sum of Discharge,			£13,548 5 9

W. S. WALKER, *Treasurer*.
ANTHONY MURRAY, *Convener of Finance Committe*
J. TURNBULL SMITH, C.A., *Auditor*.

ABSTRACT OF ACCOUNTS—

CHARGE.

1. LOCAL SUBSCRIPTIONS—						
(1) Lanarkshire—Voluntary Assessment on Proprietors, .				£800	0	0
(2) Ayrshire—Balance of Voluntary Assessment on Proprietors in 1875, ...				63	0	5
(3) Renfrewshire—Voluntary Assessment on Proprietors, .				105	0	0
(4) Argyllshire, ...				0	0	0
(5) Buteshire—Voluntary Assessment on Proprietors, .				52	10	0
(6) Glasgow—Contribution by City of Glasgow, . .				200	0	0
				£1220	10	5
2. AMOUNT COLLECTED DURING SHOW—						
At Gates, ...	£2,739	17	6			
At Grand Stand, ...	196	18	0			
Season Tickets, ...	13	5	0			
Catalogues and Awards, . . .	292	1	0			
Gentlemen's Room and Cloak Room, .	7	6	10			
				3,249	8	4
3. RENT OF REFRESHMENT BOOTHS, ...				200	0	0
4. RENT OF STALLS, ...				1,690	2	0
5. FORFEITED DEPOSIT MONEY FOR RETURN OF HORSES, .				12	0	0
6. DRAWN AT TRIAL OF SHEAF BINDERS, ...				6	4	0
7. INTEREST FROM TWEEDDALE MEDAL FUND, . . .				19	10	2
8. INTEREST FROM ROYAL BANK, ...				3	2	9
				£6,400	17	8
BALANCE OF PAYMENTS, . .				259	19	10
				£6,660	17	6

NOTE.—To the above Balance of	£259	19	10
There must be added the Premiums undrawn at 30th November, amounting to . .	319	10	2
Making the probable Loss, . .	£579	10	0

ABSTRACT of the ACCOUNTS of the

CHARGE.

. FUNDS as at 30th November 1881—						
Debenture Bond by Caledonian Railway Company, .				£1,000	0	0
Debenture Stock of the North British Railway Company, .				1,200	0	0
Funded Debt of the Clyde Navigation Trustees, £3000, purchased at				2,970	0	0
Stock of the Royal Bank, £305, purchased at . . .				671	0	0
				£5,841	0	0
BALANCE in Bank at 30th November 1881, .				301	2	1
				£6,142	2	1
2 INCOME received—						
On £1000 Caledonian Railway Company Debenture Bond at 3¾ per cent. £37, 10s., less tax, 18s. 1d.,	£36	11	11			
On £1200 North British Railway Company Debenture Stock at 4¼ per cent., £51, less tax, £1, 4s. 7d.,	49	15	5			
On £3000 Funded Debt Clyde Navigation Trustees at 4 per cent., £120, less tax, £2, 17s. 9d.,	117	2	3			
	£203	9	7			
On £305 Royal Bank Stock for year,	28	19	6			
On Bank Account, ...	3	7	10			
				235	16	11
SUM OF CHARGE, . .				£6,377	19	0

EDINBURGH, *3rd January* 1883.

GLASGOW SHOW, 1882.

DISCHARGE.

1. SHOW-YARD EXPENDITURE—Fitting up, £2,482 ; Bee Tent, £20 ; Repairing Turnstiles, £42 ; Inspecting Horse Ring Gallery, £4, 9s. 10d. ; Rent of Trades Hall for Lecture, £4, 13s. 6d. ; Painting Tickets, £3, 15s. 6d. ; Firemen, £2 ; Cartages, £9, 15s. 8d. ; Saw-dust, &c., £4, 12s. 1d. ; Relaying Foot-path, £7, 19s. 3d. ; Miscellaneous, £3, 6s.,	£2,584	11	10
2. FORAGE AND BEDDING FOR STOCK,	330	1	6
3. HAY FOR TRIAL OF STACK-DRYING FAN, £72, 13s. 6d. (less £6, 17s. 6d. for hay sold) and allowance of £20 to R. A. Lister & Co.,	85	16	6
4. POLICE FORCE,	38	9	9
5. TRAVELLING EXPENSES of Judges, &c.,	149	3	9
6. HOTEL and other Bills for Directors, Judges, Secretary, &c.,	375	14	8
7. DIRECTORS' and Judges' Dinners,	51	10	0
8. MUSIC in Show-Yard,	64	2	9
9. PRINTING Catalogues and Awards, and Lithographing Tickets,	339	2	6
10. ADVERTISING and Posting Bills,	54	18	11
11. ALLOWANCE to Local Secretary,	10	0	0
12. ALLOWANCE to Practical Engineer,	25	4	0
13. ALLOWANCE to Local Veterinary Inspector,	10	0	0
14. EXPENSES in connection with Trial of Sheaf Binders,	29	6	0
15. CLERKS and Assistants,	99	13	0
16. ATTENDANTS at Turnstiles and Ticket Gates,	70	3	0
17. POSTAGES,	27	10	0
18. MISCELLANEOUS OUTLAYS—Telegrams, Bank Charges, &c.,	3	2	4
AMOUNT OF GENERAL EXPENSES,	£4,348	10	0
19. PREMIUMS drawn at 30th November 1882,	2,312	7	6
	£6,660	17	6

W. S. WALKER, *Treasurer.*
ANTHONY MURRAY, *Convener of Finance Committee.*
J. TURNBULL SMITH, C.A., *Auditor.*

EDINBURGH, *3rd January* 1883.

ARGYLL NAVAL FUND for 1881-82.

DISCHARGE.

1. ALLOWANCES to the five following Recipients—						
Norman Godfrey Macalister, eighth year,				£40	0	0
Charles Hope Dundas, fourth year,				40	0	0
Edward Walrond de Wells Bruce, third year,				40	0	0
Edward W. Elphinstone Wemyss, third year,				40	0	0
Louis Wentworth Chetwynd, third year,				40	0	0
				£200	0	0
2. FUNDS as at 30th November 1882—						
Debenture Bond by Caledonian Railway Company,	£1,000	0	0			
Debenture Stock of the North British Railway Company,	1,200	0	0			
Funded Debt of the Clyde Navigation Trustees, £3000, purchased at	2,970	0	0			
Stock of the Royal Bank, £305, purchased at	671	0	0			
	£5,841	0	0			
BALANCE in Bank at 30th November 1882,	336	19	0			
				6,177	19	0
SUM OF DISCHARGE,				£6,377	19	0

W. S. WALKER, *Treasurer.*
ANTHONY MURRAY, *Convener of Finance Committee.*
J. TURNBULL SMITH, C.A., *Auditor.*

HIGHLAND AND AGRICULTURAL SOCIETY.

General Show of Stock and Implements at Edinburgh, 1884,

The Centenary of the Society.

The Directors are willing to accept on this occasion suitable Champion Cups or Prizes for the recognised Breeds of Cattle, Horses, and Sheep, for which all former Prize Animals will be eligible to compete.

Communications on the subject to be addressed to Mr. F. N. Menzies, Secretary of the Society, 3 George IV. Bridge, Edinburgh.

APPENDIX (B).

PREMIUMS

OFFERED BY

THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND IN 1883.

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GENERAL NOTICE.

The Highland Society was instituted in the year 1784, and incorporated by Royal Charter in 1787. Its operation was at first limited to matters connected with the improvement of the Highlands of Scotland; but the supervision of certain departments, proper to that part of the country, having been subsequently committed to special Boards of Management, several of the earlier objects contemplated by the Society were abandoned, while the progress of agriculture led to the adoption of others of a more general character. The exertions of the Society were thus early extended to the whole of Scotland, and have, for the greater part of a century, been directed to the promotion of the science and practice of agriculture in all its branches.

In accordance with this more enlarged sphere of action, the original title of the Society was altered, under a Royal Charter, in 1834, to The Highland and Agricultural Society of Scotland.

The leading purposes of the Institution are set forth in the following pages, where it will be found that Premiums are offered for Reports on almost every subject connected with the cultivation of the soil; the rearing and feeding of stock; the management of the dairy; the improvement of agricultural machinery and implements; the growth of timber; the extension of cottage accommodation; the application of chemical science; and the dissemination of veterinary information.

Among the more important measures which have been effected by the Society are—

1. Agricultural Meetings and General Shows of Stock, Implements, &c., held in the principal towns of Scotland, at which exhibitors from all parts of the United Kingdom are allowed to compete.

2. A system of District Shows instituted for the purpose of improving the breeds of Stock most suitable for different parts of the country, and of aiding and directing the efforts of Local Agricultural Associations.

3. The encouragement of Agricultural Education, under powers conferred by a supplementary Royal Charter, granted in 1856, and authorising "The Council of the Highland and Agricultural Society on Education" to grant Diplomas to Students of Agriculture; and by the establishment of Bursaries.

4. The establishment of Agricultural Stations for the purpose of promoting the application of science to agriculture, and the appointment of a chemist to superintend all experiments conducted at these Stations, and prepare a Report of the same to be published in the Transactions. Also to subsidise, under certain conditions, Local Analytical Associations.

5. The advancement of the Veterinary Art, by conferring Certificates on Students who have passed through a prescribed curriculum, and who are found, by public examination, qualified to practise. Now terminated in accordance with arrangements with the Royal College of Veterinary Surgeons.

6. The appointment of a Board of Examiners, and the granting of First and Second Class Certificates in Forestry.

7. The annual publication of the Transactions, which comprehend the Prize-Reports, and reports of experiments, also an abstract of the business at Board and General Meetings, and other communications.

8. The management of a fund left by John, 5th Duke of Argyll the original President of the Society), to assist young natives of the Highlands who enter Her Majesty's Navy.

CONSTITUTION AND MANAGEMENT.

The general business of THE HIGHLAND AND AGRICULTURAL SOCIETY is conducted under the sanction and control of a Royal Charter, which authorises the enactment of Bye-Laws. Business connected with Agricultural Education is conducted under the authority of a supplementary Royal Charter, also authorising the enactment of Bye-Laws.

The Office-Bearers consist of a President, Four Vice-Presidents, Thirty-two Ordinary and Twenty Extraordinary Directors, a Treasurer, an Honorary and an Acting Secretary, an Auditor, and other Officers.

The Directors meet on the first Wednesday of each month from November to June; seven being a quorum. The proceedings of the Directors are reported to General Meetings of the Society, held in January and in June or July.

With reference to motions at General Meetings, Bye-Law No. 10 provides—"That at General Meetings of the Society no motion or proposal (except of mere form or courtesy) shall be submitted or entertained for immediate decision unless notice thereof has been given a week previously to the Board of Directors, without prejudice, however, to the competency of making such motion or proposal to the effect of its being remitted to the Directors for consideration, and thereafter being disposed of at a future General Meeting."

The Council on Education, under the Supplementary Charter, consists of Sixteen Members—Nine nominated by the Charter, and Seven elected by the Society. The Board of Examiners consists of Ten Members.

Candidates for admission to the Society must be proposed by a Member, and are elected at the half-yearly General Meetings in January and June or July. The ordinary subscription is £1, 3s. 6d. annually, which may be redeemed by one payment, varying, according to the number of previous annual payments, from £12, 12s. to £7, 1s. Proprietors farming the whole of their own lands, whose assessment on the Valuation Roll does not exceed £500 per annum, and all Tenant-Farmers, Office-Bearers of Local Agricultural Associations, Resident Agricultural Factors, Land Stewards, Foresters, Agricultural Implement Makers, and Veterinary Surgeons, none of them being also owners of land to an extent exceeding £500 per annum, are admitted on a subscription of 10s. annually, which may be redeemed by one payment, varying, according to the number of previous annual payments, from £5, 5s. to £3. Subscriptions payable on election, and afterwards annually in January. According to the Charter, a Member who homologates his Election by paying his first subscription cannot retire until he has paid in annual subscriptions, or otherwise, an amount equivalent to a life composition. Members having candidates to propose are requested to state whether the candidate should be on the £1, 3s. 6d. or 10s. list.

Members of the Society receive the Transactions free on application to the Secretary, and are entitled to apply for District Premiums—to report Ploughing Matches for the Medal—to free admission to the Showyard, and to exhibit Stock at reduced rates. Firms are not admitted as Members, but if one partner of a firm becomes a Member, the firm is allowed to exhibit at Members' rates.

Orders, payable at the Royal Bank of Scotland, Edinburgh, are issued by the Directors, in name of the persons in whose favour Premiums have been awarded.

All communications must be addressed to "FLETCHER NORTON MENZIES, Esq., Secretary of the Highland and Agricultural Society of Scotland, No. 3 George IV. Bridge, Edinburgh."

ESTABLISHMENT FOR 1883.

President.

His Grace The DUKE of RICHMOND and GORDON, K.G.,
49 Belgrave Square, London.

Vice-Presidents.

The Duke of Portland, Welbeck Abbey, Notts.
The Duke of Sutherland, K.G., Dunrobin Castle, Golspie.
The Earl of Seafield, Cullen House, Cullen.
Lord Lovat, Beaufort Castle, Beauly.

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FLETCHER NORTON MENZIES, *Secretary*.
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THOMAS WALLEY, M.R.C.V.S., *Professor of Cattle Pathology*.
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G. WATERSTON & SONS, *Stationers*.
HAMILTON, CRICHTON, & CO., *Silversmiths*.
ALEXANDER KIRKWOOD & SON, *Medallists*.
JOHN WATHERSTON & SONS, *Inspectors of Works*.
WILLIAM SIMPSON, *Messenger*.

Chairman of Committees.

1. *Argyll Naval Fund,*	Admiral Maitland Dougall of Scotscraig, Tayport.
2. *Chemical Department,*	Colin J. Mackenzie of Portmore, Eddleston.
3. *Cottages and Gardens,*	The Hon. G. R. Vernon, Auchans House.
4. *District Shows,*	A. Campbell Swinton of Kimmerghame, Duns.
5. *Finance,*	Anthony Murray of Dollerie.
6. *General Shows,*	Colonel Gillon of Wallhouse, Bathgate.
7. *Hall and Chambers,*	John Ord Mackenzie of Dolphinton.
8. *Highland Industries, &c.*	Sir James H. Gibson-Craig of Riccarton, Bart.
9. *Law,*	Thomas Graham Murray, W.S.
10. *Machinery,*	Thomas Mylne, Niddrie Mains, Liberton.
11. *Ordnance Survey,*	Robert Dundas of Arniston, Gorebridge.
12. *Publications, &c.,*	Alexander Forbes Irvine of Drum.
13. *Veterinary Department,*	James Hope, East Barns, Dunbar.

General Meetings.—By the Charter the Society must hold two General Meetings, and, under ordinary circumstances, they are held on the third Wednesday of the months of January and June, at one o'clock, in the Society's Hall, 3 George IV. Bridge, for the election of Members and other business.

Meeting at Inverness.—By a resolution of the General Meeting on 15th January 1879, a General Meeting of Members is held in the Showyard on the occasion of the Annual Show. This year it will be held at Inverness, on Wednesday 25th July, at 1.30 p.m.

General Show at Inverness.—24th, 25th, 26th, and 27th July,—Entries close for Implements, 1st June—Stock, 15th June.

Directors Meetings.—The Board of Directors meet on the first Wednesday of each month from November till June inclusive, at 1.30 p.m., and occasionally as business may require, on a requisition by three Directors to the Secretary, or on intimation by him.

Committee Meetings.

Finance.—First Tuesday in November, at 11 a.m.

Highland Industries.—First Tuesday in November, at 12 noon.

Machinery.—First Tuesday in November, at 1 p.m.

General Shows. — First Tuesday in November, at 2 p.m., and first Tuesday in June at 2 p.m.

Publications. — First Wednesday in November, at 12 noon, and first Wednesday in January, at 12 noon.

Cottages and Gardens.—First Tuesday in December, at 12 noon.

District Shows.—First Tuesday in December, at 12.30 p.m.

Chemical—First Tuesday in December, at 2 p.m. and first Tuesday in March at, 2 p.m.

The other Standing Committees—ARGYLL NAVAL FUND, HALL AND CHAMBERS, LAW, ORDNANCE SURVEY, and VETERINARY, meet when required.

Examinations for the Society's Diploma and Certificates in Agriculture and Certificates in Forestry are held annually in the end of March or beginning of April.

Examinations for the Society's Bursaries are held annually on the last Wednesday of October, at 10 a.m.

COMMITTEES FOR 1883.

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1. ARGYLL NAVAL FUND.

Admiral MAITLAND DOUGALL of Scotscraig, R.N., Tayport, *Convener.*
Lord ELPHINSTONE, Carberry Tower, Musselburgh.
Admiral Sir WILLIAM EDMONSTONE of Duntreath, Bart.
HEW CRICHTON, S.S.C., 13 Nelson Street, Edinburgh.

2. CHEMICAL DEPARTMENT.

C. J. MACKENZIE of Portmore, Eddleston, *Convener.*
Sir ALEXANDER M. MACKENZIE of Delvine, Bart., Dunkeld.
Professor DOUGLAS MACLAGAN, 28 Heriot Row, Edinburgh.
,, BALFOUR, Inverleith House, Edinburgh.
,, WILSON, University, Edinburgh.
P. B. SWINTON, Holyn Bank, Gifford.
JOHN MUNRO, Fairnington, Roxburgh.
ADAM SMITH, Stevenson Mains, Haddington.
CHARLES SMITH, Whittinghame, Prestonkirk.
JOHN SCOTT DUDGEON, Longnewton, St. Boswells.
GEORGE R. GLENDINNING, Hatton Mains, Ratho.
ALEX. R. MELVIN, Bonnington, Wilkieston.
DAVID AINSLIE of Costerton, Blackshiels.
Lieut.-Col. HARE of Calder Hall, Philpston House, Winchburgh.
HUGH LINDSAY, Meadowflatt, Thankerton.
Dr. ANDREW P. AITKEN, 11 St. Andrew's Lane, Edinburgh, *Chemist.*

3. COTTAGES AND GARDENS.

The Hon. G. R. VERNON, Auchans House, Kilmarnock, *Convener.*
JOHN ORD MACKENZIE of Dolphinton.
ARCHIBALD CAMPBELL SWINTON of Kimmerghame, Duns.
C. J. MACKENZIE of Portmore, Eddleston.
JAMES HOPE, East Barns, Dunbar.

4. DISTRICT SHOWS.

ARCHIBALD CAMPBELL SWINTON of Kimmerghame, *Convener.*
Sir JAMES R. GIBSON-MAITLAND of Barnton, Bart., Craigend, Stirling.
Sir JAMES H. GIBSON-CRAIG of Riccarton, Bart., Currie.
THOMAS MYLNE, Niddrie Mains, Liberton.
ANDREW MITCHELL, Alloa.
ADAM SMITH, Stevenson Mains, Haddington.
JAMES HOPE, East Barns, Dunbar.
THOMAS ELLIOT, Blackhaugh, Galashiels.
Lieut.-Col. HARE of Calder Hall, Philpston House, Winchburgh.
F. E. VILLIERS, Closeburn Hall, Thornhill.
LAWRENCE DREW, Merryton, Hamilton.
J. T. S. PATERSON, Plean, Bannockburn.

5. FINANCE.

ANTHONY MURRAY of Dollerie, *Convener.*
WILLIAM S. WALKER of Bowland, C.B., *Treasurer.*
Sir G. GRAHAM MONTGOMERY of Stanhope, Bart.
HEW CRICHTON, S.S.C., 13 Nelson Street, Edinburgh.
THOMAS A. HOG of Newliston, Kirkliston.
GEORGE AULDJO JAMIESON, C.A., Edinburgh.
PATRICK BLAIR, W.S., York Place.
JOHN TURNBULL SMITH, C.A., 29 St Andrew Square.

6. GENERAL SHOWS.

Colonel GILLON of Wallhouse, Bathgate, *Convener*.
Lord ARTHUR CECIL, Orchard Mains, Innerleithen.
Lord POLWARTH, Mertoun House, St. Boswells.
Sir MICHAEL R. SHAW STEWART of Greenock and Blackhall, Bart.
Sir JAMES H. GIBSON-CRAIG of Riccarton, Bart.
DAVID STEVENSON, C.E., 84 George Street, Edinburgh.
THOMAS MYLNE, Niddrie Mains, Liberton.
ALEXANDER YOUNG, Keir Mains, Dunblane.
WILLIAM FORD, Fentonbarns, Drem.
ANDREW MITCHELL, Alloa.
ALEXANDER FORBES IRVINE of Drum.
Colonel WILLIAMSON of Lawers, Crieff.
WALTER SCOTT, Glendronach, Huntly.
Rev. JOHN GILLESPIE, Mouswald Manse, Dumfries.
JAMES HOPE, East Barns, Dunbar.
GIDEON POTT of Dod, Knowesouth, Jedburgh.
C. J. MACKENZIE of Portmore, Eddleston.
JAMES CUNNINGHAM, Tarbreoch, Dalbeattie.
ANDREW ALLAN, Munnoch, Dalry, Ayrshire.
FRED. E. VILLIERS, Closeburn Hall, Thornhill.
A. H. JOHNSTONE DOUGLAS of Lockerbie, Glen Stuart, Annan.
R. H. HARRIS, Earnhill, Forres.
LAWRENCE DREW, Merryton, Hamilton.
JAMES M'QUEEN of Crofts, Dalbeattie.

7. HALL AND CHAMBERS.

JOHN ORD MACKENZIE of Dolphinton, *Convener*.
Sir JAMES GARDINER BAIRD of Saughton Hall, Bart.
ANTHONY MURRAY of Dollerie, 141 George Street, Edinburgh.
DAVID STEVENSON, C.E., 84 George Street, Edinburgh.
WILLIAM S. WALKER of Bowland, C.B.

8. HIGHLAND INDUSTRIES AND FISHERIES.

Sir JAMES H. GIBSON-CRAIG of Riccarton, Bart., *Convener*.
Sir MICHAEL R. SHAW STEWART of Greenock and Blackhall, Bart.
Sir JAMES RAMSAY GIBSON-MAITLAND of Barnton, Bart.
Sir KENNETH S. MACKENZIE of Gairloch, Bart.
Lieut.-General BURROUGHS of Rousay, C.B., Orkney.
ALEXANDER FORBES IRVINE of Drum.
Professor WILSON, University, Edinburgh.
ARCHIBALD YOUNG, 22 Royal Circus, Edinburgh.

9. LAW.

THOMAS GRAHAM MURRAY, W.S., 11 Randolph Crescent, *Convener*.
JOHN ORD MACKENZIE of Dolphinton, W.S., Edinburgh.
WILLIAM S. WALKER of Bowland, C.B.
ANTHONY MURRAY of Dollerie, W.S., Edinburgh.
HEW CRICHTON, S.S.C., 13 Nelson Street, Edinburgh.
GEORGE AULDJO JAMIESON, C.A., Edinburgh.
PATRICK BLAIR, W.S., York Place.

10. MACHINERY.

THOMAS MYLNE, Niddrie Mains, *Convener*.
The EARL of STAIR, Lochinch, Castle Kennedy, Wigtownshire.
Lord ARTHUR CECIL, Orchard Mains, Innerleithen.
The Hon. GEORGE WALDEGRAVE LESLIE, Leslie House, Leslie.
Sir JAMES R. GIBSON-MAITLAND of Barnton, Bart.

DAVID STEVENSON, C.E., 84 George Street, Edinburgh.
Professor WILSON, University, Edinburgh.
JOHN MUNRO, Fairnington, Roxburgh.
P. B. Swinton, Holyn Bank, Gifford.
C. J. MACKENZIE of Portmore, Eddleston.
JOHN KEMP, Stirling.
JAMES A. R. MAIN, Clydesdale Iron Works, Possil Park, Glasgow.
JOHN MARSHALL, Maybole.
JOHN YOUNG, jun., Ayr.
A. H. JOHNSTONE DOUGLAS of Lockerbie, Glen Stuart, Annan.
T. M. NICOLL, Littleton, Kirriemuir.
ALEXANDER DUDGEON, Easter Dalmeny, Queensferry.
JAMES SHAW, Skaithmuir, Coldstream.
J. T. S. PATERSON, Plean, Bannockburn.
JAMES D. PARK, Greenside Lane, Edinburgh, *Practical Engineer.*

11. ORDNANCE SURVEY.

ROBERT DUNDAS of Arniston, *Convener.*
C. J. MACKENZIE of Portmore, Eddleston.
WILLIAM S. WALKER of Bowland, C.B.

12. PUBLICATIONS AND PREMIUMS FOR REPORTS.

ALEXANDER FORBES IRVINE of Drum, *Convener.*
Sir ALEX MUIR MACKENZIE of Delvine, Bart., Dunkeld.
Sir JAMES R. GIBSON-MAITLAND of Barnton, Bart.
WILLIAM S. WALKER of Bowland, C.B.
Professor BALFOUR, Inverleith House, Edinburgh.
,, WILSON, University, Edinburgh.
ROBERT SCOT SKIRVING, 29 Drummond Place, Edinburgh.
P. B. SWINTON, Holyn Bank, Gifford.
THOMAS MYLNE, Niddrie Mains, Liberton.
DAVID STEVENSON, C.E. 84 George Street, Edinburgh.
Dr. CLEGHORN of Stravithie, St. Andrews.
WILLIAM ELIOTT LOCKHART of Borthwickbrae, Branxholme, Hawick.
C. J. MACKENZIE of Portmore, Eddleston.
Rev. JOHN GILLESPIE, Mouswald Manse, Dumfries.
WILLIAM MACDONALD, Editor, *North British Agriculturist,* Edinburgh.
F. E. VILLIERS, Closeburn Hall, Thornhill.
JOHN SCOTT DUDGEON, Longnewton, St. Boswells.

13. VETERINARY DEPARTMENT.

JAMES HOPE, East Barns, Dunbar, *Convener.*
Lord ARTHUR CECIL, Orchard Mains, Innerleithen.
The Hon. G. R. VERNON, Auchans House, Kilmarnock.
Sir JAMES H. GIBSON-CRAIG of Riccarton, Bart.
Sir ALEXANDER KINLOCH of Gilmerton, Bart., Drem.
Colonel GILLON of Wallhouse, Bathgate.
WILLIAM S. WALKER of Bowland, C.B.
THOMAS MYLNE, Niddrie Mains, Liberton.
ADAM SMITH, Stevenson Mains, Haddington.
Colonel WILLIAMSON of Lawers, Crieff.
Lieut.-Colonel HARE of Calder Hall.

The President, Vice-Presidents, and Honorary Secretary are members *ex officio* of all Committees.

AGRICULTURAL EDUCATION.

CERTIFICATES AND DIPLOMA IN AGRICULTURE.

COUNCIL ON EDUCATION.

By a Supplementary Charter under the Great Seal, granted in 1856, the Society is empowered to grant Diplomas.

Members of Council named by Charter.

The PRESIDENT of the HIGHLAND AND AGRICULTURAL SOCIETY—*President.*
The LORD JUSTICE-GENERAL—*Vice-President.*

The LORD ADVOCATE.
The DEAN OF FACULTY.
The PROFESSOR OF AGRICULTURE.
The PROFESSOR OF ANATOMY.
The PROFESSOR OF BOTANY.
The PROFESSOR OF CHEMISTRY.
The PROFESSOR OF NATURAL HISTORY.

Members of Council nominated by Society.

The DUKE OF BUCCLEUCH, K.G.
WILLIAM S. WALKER of Bowland, C.B.
JOHN WILSON, Wellnage.
THOMAS MYLNE, Niddrie Mains.
ROBERT DUNDAS of Arniston.
JOHN MUNRO, Fairnington.
A. CAMPBELL SWINTON of Kimmerghame.

Board of Examiners.

1. *Science and Practice of Agriculture.*—Professor WILSON; JOHN WILSON, Wellnage, Duns; THOMAS MYLNE, Niddrie Mains, Liberton; and JOHN MUNRO, Fairnington, Roxburgh.
2. *Botany.*—Professor BALFOUR.
3. *Chemistry.*—Dr. A. P. AITKEN.
4. *Natural History.*—Dr. RAMSAY H. TRAQUAIR.
5. *Veterinary Science.*—Professor WILLIAMS.
6. *Field Engineering.*—DAVID STEVENSON, M. Inst. C.E.
7. *Book-keeping.*—JOHN TURNBULL SMITH, C.A.

Standing Acting Committee.

The LORD JUSTICE-GENERAL—*Convener.*

The PROFESSOR OF AGRICULTURE.
The PROFESSOR OF BOTANY.
The PROFESSOR OF CHEMISTRY.
THOMAS MYLNE, Niddrie Mains.
JOHN MUNRO, Fairnington.
A. CAMPBELL SWINTON of Kimmerghame.

BYE-LAWS.

I. That, in terms of the Charter, the Society shall nominate seven members to act on the Council on Education.

II. That the Council shall appoint a Board of Examiners on the following subjects:—Science and Practice of Agriculture; Botany; Chemistry; Natural History; Veterinary Science; Field Engineering; and Book-keeping.

III. That the examinations shall be both written and oral, that the value of the answers shall be determined by numbers, and that the oral examinations shall be public.

IV. That there shall be three examinations,* to be styled respectively the "Second Class Certificate Examination," the "First Class Certificate Examination," and the "Diploma Examination."

V. That to pass the "Second Class Certificate Examination," a candidate must be acquainted with the science and practice of agriculture, elementary chemistry, field engineering, and book-keeping; and that a certificate in the following terms, bearing the corporate seal and arms of the Society, signed by the President or Vice-President of the Council on Education, the Examiners, and by the Secretary, shall be granted to a candidate passing this examination:—

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* It has been resolved that, under ordinary circumstances, the examinati shall be held annually in the end of March or beginning of April, candidates being quired to lodge intimation before the 15th of March.

"These are to certify that on the A. B. was examined, and has been found to possess a knowledge of the science and practice of agriculture, elementary chemistry, field engineering, and book-keeping."

VI. That to pass the "First Class Certificate Examination" a candidate must be acquainted with the science and practice of agriculture, botany, chemistry, natural history, veterinary science, field engineering, and book-keeping; and that a certificate in the following terms, bearing the corporate seal and arms of the Society, signed by the President or Vice-President of the Council on Education, the Examiners, and by the Secretary, shall be granted to candidates passing this examination:—

"These are to certify that on the A. B. was examined, and has been found to possess a knowledge of the science and practice of agriculture, botany, chemistry, natural history, veterinary science, field engineering, and book-keeping."

VII. That to pass the "Diploma Examination" a candidate must possess a *thorough knowledge* of the science and practice of agriculture, botany, chemistry, natural history, veterinary science, field engineering, and book-keeping; and that a diploma in the following terms, bearing the corporate seal and arms of the Society, and signed by the President or Vice-President of the Council on Education, the Examiners, and by the Secretary, shall be granted to candidates passing this examination:—

"These are to certify that, on the A. B. was examined, and has been found to be proficient in the science and practice of agriculture, botany, chemistry, natural history, veterinary science, field engineering, and book-keeping."

VIII. That each successful candidate for the Society's Agricultural Diploma shall thereby become eligible to be elected a free life member of the Society.

IX. That the Society shall grant annually ten bursaries of £20 each; and five of £10 each, to be competed for by pupils of schools to be approved of by the Directors, which include or are willing to introduce the teaching of chemistry, and the following branches of natural science—physical geography, botany, and geology, into their curriculum.

X. That the £20 bursaries* shall be tenable for one year at the University of Edinburgh, for the purpose of enabling the holders to take the classes necessary to qualify for the Society's certificate or diploma; and the £10 bursaries to be tenable for the same period to enable the holders to receive another year's preparation at the schools.

XI. That the bursaries shall be determined by examination held in Edinburgh by the Society's Examiners.

XII. That a Standing Acting Committee of the Council on Agricultural Education shall be appointed by the Directors.

SYLLABUS OF EXAMINATION

FOR CERTIFICATES AND DIPLOMA.

I.—SCIENCE AND PRACTICE OF AGRICULTURE.

1. Geological strata—surface geology—formation of soils—their classification—chemical and physical characters and composition—suitability for cultivation. 2. The principle of rotations—rotations suitable for different

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* The £20 bursaries are not due till the holder presents himself for examination for the certificate or diploma.

soils—systems of farming. 3. The composition of (*a*) manures—farmyard and artificial—period and mode of application. The composition of (*b*) feeding substances—their suitability for different classes of farm stock—considerations affecting their use. 4. "How crops grow"—our farm crops—their cultivation—diseases—insect injuries and remedies—their chemical composition. The formation and management of plantations. 5. The principles on which drainage, irrigation, and warping operations should be based and carried out. The application of lime—marl—clay, &c. 6. Meteorology, or the laws of climate as affecting plant life—the influence of light and heat on cultivation—of absorption and retention of heat and moisture—of porosity and capillarity in soils. 8. The breeding, rearing, feeding, and general treatment of farm stock—the different breeds of cattle and sheep—their characteristics—the districts where they are generally met with. 9. The machines and implements used in farming—their uses—and the principal points to be attended to in their construction. The "prime movers," or sources of power used in agriculture—man—horse—wind—water—steam,—their relative values and advantages. *Text-books*—Morton's "Cyclopedia of Agriculture," Blackie & Son; "Our Farm Crops," Blackie and Son; "How Crops Grow," Macmillan & Co.; Roscoe's "Elementary Chemistry," Macmillan & Co.; Lindley's, Henfrey's, or Balfour's "Botany"; Page's "Geological Text-Book," Blackwood & Sons.

II.—BOTANY.

1. Nutritive Organs of Plants—root, stem, leaves. Functions of roots. Various kinds of stems, with examples. Use of the stem. Structure of leaves. Different kinds of leaves. Arrangement and functions of leaves. 2. Reproductive Organs—Flower and its parts. Arrangements of the whorls of the flower—calyx, corolla, stamens, pistil. Ovule. Mature pistil or fruit. Pruning and grafting. Seed. Young plant or embryo. Sprouting of the seed, or germination. 3. General Principles of Classification—meaning of the terms Class, Order, Genus, Species. Illustrations of natural orders taken from plants used in agriculture, such as grain-crops, grasses, clovers, vetches, turnips, mangold-wurzel, peas, beans, &c. Practical examination in fresh specimens and models; some of the latter may be seen in the Museum, at the Royal Botanic Garden, which is open daily to the public, free. *Text-book*—Balfour's "Elements of Botany," A. & C. Black, 1876, price 3s. 6d.

III.—CHEMISTRY.

The general principles of chemical combination. The chemistry of the more commonly occurring elements, and their more important compounds. The chemical processes concerned in agriculture generally. The changes which take place in the germination, growth, and maturation of plants, in the weathering and manuring of soils, &c. The composition and chemical character of the common mineral manures. *Text-books*—Roscoe's "Lessons in Elementary Chemistry," Macmillan & Co., London, price 4s. 6d. Johnston and Cameron's "Elements of Agricultural Chemistry and Geology." Johnson's "How Crops Grow," Macmillan & Co., London.

IV.—NATURAL HISTORY.

1. ZOOLOGY.

1. The Primary Divisions of the Animal Kingdom, with examples of each. 2. The Vertebrate Kingdom. The peculiarities and functions of the alimentary canal, distinguishing the Ruminants. 3. The orders—Hymenoptera, Diptera, and Coleoptera—with examples of insects injurious to farm crops belonging to each of the Orders—the preservation of birds which prey upon these insects, drawing a distinction between those which are beneficial and those which are destructive to crops. *Text-book*—Nicholson's "Introductory Text-Book of Zoology," William Blackwood & Sons, Edinburgh and London.

2. GEOLOGY.

4. The various strata forming the earth's crust in their order of deposition. 5. Their influences on the surface soils of the country. 6. The meaning and application of Disintegration, Drift, Alluvium, Dip, Strike, Fault. Page's "Introductory Text-Book of Geology," and Lyell's "Students' Elements of Geology."

V.—VETERINARY SCIENCE.

1. Anatomy of the digestive organs of horse and ox, describing their structural differences. 2. The process of digestion in the above animals, and food most proper for each in quantity and quality. 3. The management of stock before, at, and after parturition. The time of utero-gestation in the domesticated animals. 4. The general principles to be followed in the treatment of very acute disease, before assistance of the veterinary surgeon can be procured.

VI.—FIELD ENGINEERING.

1. Land-Surveying with the Chain. 2. Mensuration of Areas of Land, in Imperial and Scotch acres, from a Chain Survey or from a Plan. 3. Levelling with the ordinary levelling instrument and staff, and calculating levels and gradients. *Text-books*—"Rudimentary Treatise on Land and Engineering Surveying," by T. Baker, C.E.; "Weales Series," price 2s., part I., chaps. 1, 2, 3, and 6, and part II. chap. 1 to be read.

VII.—BOOK-KEEPING.

1. Questions in Practice and Proportion. 2. Book-keeping—Describe books to be kept; give examples—taking of stock. *Text-book*—Stephen's "Practical System of Farm Book-keeping," Wm. Blackwood & Sons, Edinburgh, price 2s. 6d.

EXAMINATION FOR BURSARIES.

Candidates are examined in the Elements of Botany, Chemistry, Physical Geography, and Geology. *Text-books*—Balfour's "Elements of Botany"; Roscoe's "Lessons in Elementary Chemistry"; Page's "Introductory Text-Book of Geology"; Geikie's "Primer of Physical Geography"; and Lyell's "Students' Elements of Geology."

It has been resolved that, under ordinary circumstances, the examinations shall be held annually in the end of October, and candidates must enter their names with the Secretary before the 10th of that month, and produce the necessary certificates from the teachers of the schools they have attended.

The bursaries are open to candidates not less than fourteen years of age.

VETERINARY DEPARTMENT.

The Society established a Veterinary Department in 1823, but by an arrangement made with the Royal College of Veterinary Surgeons, the Society's examinations ceased in 1881. Holders of the Society's Veterinary Certificate are entitled to become Members of the Royal College of Veterinary Surgeons on payment of certain fees, without being required to undergo any further examination. The number of students who have passed for the Society's Certificate is 1183.

In 1874 the Society resolved to vote annually eight silver medals for Class Competition to each of the two Veterinary Colleges in Edinburgh, and to the one in Glasgow.

FORESTRY DEPARTMENT.

The Society grants FIRST and SECOND CLASS CERTIFICATES in FORESTRY.

BOARD OF EXAMINERS.

1. *Science of Forestry and Practical Management of Woods.*—DR. CLEGHORN of Stravithie, St. Andrews ; JOHN MACGREGOR, Ladywell, Dunkeld ; WILLIAM M'CORQUODALE, Scone Palace, Perth ; J. GRANT THOMSON, Grantown, Strathspey.
2. *Elements of Botany.*—Professor BALFOUR.
3. *Nature and Properties of Soils, Drainage, and Effects of Climate.*—Professor WILSON.
4. *Land and Timber Measuring and Surveying ; Mechanics and Construction, as applied to Fencing, Drainage, Bridging, and Road-Making ; Implements of Forestry.*—A. W. BELFRAGE, C.E.
5. —*Book-keeping and Accounts.*—JOHN TURNBULL SMITH, C.A.

Candidates must possess—1*st*, A thorough acquaintance with the details of practical forestry. 2*d*, a general knowledge of the following branches of study, so far as these apply to forestry :—The Outlines of Botany ; the Nature and Properties of Soils, Drainage and Effects of Climate ; Land and Timber Measuring and Surveying ; Mechanics and Construction, as applied to fencing, draining, bridging, and road-making ; Implements of Forestry : Book-keeping and Accounts. The examinations are open to candidates of any age.

SYLLABUS OF EXAMINATION.

1.—SCIENCE OF FORESTRY AND PRACTICAL MANAGEMENT OF WOODS.

1. Formation and ripening of Wood. Predisposing causes of decay. 2. Restoration of Wood-lands :—(1) Natural reproduction ; (2) Artificial planting, 3. General management of plantations. Cropping by rotation. Trees recommended for different situations. 4. Season and methods of pruning, thinning, and felling. 5. Circumstances unfavourable to the growth of trees. 6. Mechanical appliances for conveying and converting timber. Construction of saw-mills. 7. Qualities and uses of chief indigenous timbers. Processes of preserving timber. 8. Management of nurseries. Seed-sowing. 9. Collection of forest produce. 10. Manufacture of tar and charcoal. 11. Insects injurious to trees—preservation of birds which prey upon them, drawing a distinction between birds which are beneficial and those which are destructive to trees.

II.—ELEMENTS OF BOTANY.

1. Nutritive Organs of Plants.—Root, stem, leaves. Functions of roots. Various kinds of stems, with examples. Use of the stem. Structure of leaves. Different kinds of leaves. Arrangement and functions of leaves. 2. Reproductive Organs.—Flower and its parts. Arrangement of the whorls of the flower—calyx, corolla, stamens, pistil. Ovule. Mature pistil or fruit. Pruning and grafting. Seed. Young plant or embryo. Sprouting of the seed or germination. 3. General Principles of Classification—Meaning of the terms Class, Order, Genus, Species. Illustrations taken from common forest trees and shrubs. Practical examination on fresh specimens and models,

some of the latter may be seen in the Museum at the Royal Botanic Garden, which is open daily to the public free. Candidates may consult Professor Balfour's "Elements of Botany," published by A. & C. Black, Edinburgh, 1869, price 3s. 6d.

III.—NATURE AND PROPERTIES OF SOILS, DRAINAGE AND EFFECTS OF CLIMATE.

1. The different descriptions of soils, their classification, and suitability to growth of different descriptions of timber trees. 2. The composition and constituents of soils. The relations between the soil and trees growing on it. 3. The effects of drainage on soils and on climate. 4. The mode of drainage for plantations. 5. The influence of temperature, rainfall, aspect, shelter, and prevailing winds on tree life. 6. The methods of registering and recording observations, and the instruments used.

IV.—LAND AND TIMBER MEASURING AND SURVEYING; MECHANICS AND CONSTRUCTION AS APPLIED TO FENCING, BRIDGING, AND ROAD-MAKING; IMPLEMENTS OF FORESTRY.

1. The Use of the Level and Measuring Chain. Measuring and mapping surface areas. 2. The measurement of solid bodies—as timber, stacked bark, faggots, &c., earthwork. 3. The different modes of fencing and enclosing plantations; their relative advantages, durability, cost of construction, and repairs. 4. The setting out and formation of roads for temporary or permanent use. 5. The construction of bridges over streams and gullies; of gates or other entrances. 6. The different implements and tools used in planting, pruning, felling, barking, and working up timber trees, or preparing them for sale. Ewart's "Agricultural Assistant," Blackie & Son, Glasgow and Edinburgh, price 3s. 6d. Strachan's "Agricultural Tables," Oliver & Boyd, Edinburgh, price 2s. 6d.

V.—BOOK-KEEPING AND ACCOUNTS.

1. Questions in Practice and Proportion. 2. Book-keeping—describe books to be kept; give examples. Taking of stock.

CHEMICAL DEPARTMENT.

Chemist to the Society—Dr. A. P. AITKEN, Chemical Laboratory,
11 North St. Andrew's Lane, Edinburgh.

The object of the Chemical Department is to carry on the Experiments at the Society's Agricultural Stations, and to consider all matters coming before the Society's notice in connection with the chemistry of agriculture.

The practical chemical work of the Society is under the charge of its Chemist, whose duties are—

1. To superintend the experiments being carried on at the experimental stations of the Society, to make all necessary analyses and investigations in connection therewith, and to prepare an annual report of these for publication in the *Transactions.*
2. To perform the requisite analyses in connection with such other experiments as are conducted under the sanction and direction of the Chemical Committee, and report on the same if desired.
3. To prepare a summary of all analyses for which the Society has contributed payment, and full details of such as appear to the Chemical Committee worthy of notice for publication in the *Transactions.*
4. To attend all meetings of the Chemical Committee of the Society.
5. To have a laboratory in Edinburgh, where he may be consulted by members of the Society.
6. To maintain a sufficient staff of assistants, one of whom at least is specially engaged in, and acquainted with, both the chemical and experimental work of the Society.
7. To prepare for publication in the Society's *Transactions* reports on the more important investigations and experiments being conducted in this country and elsewhere on the application of chemistry to agriculture.
8. To deliver lectures at such places and on such subjects connected with the chemistry of agriculture as are approved of by the Chemical Committee, and for which the chemist is permitted to receive remuneration from those applying for his services.

In order to encourage members, being practical farmers, to make experiments with different manures in the field, the Society undertakes to defray the cost of making necessary analyses of soils, manures, and products for such experimentalists, provided they conduct their experiments under the direction or with the sanction of the Chemical Committee of the Society.

The chemist and his assistants are paid their travelling expenses when on the Society's work.

He receives a fee of £1, 1s. for each analysis made by him when employed as referee in connection with Local Associations.

He is entitled to charge for analyses made for members of the Society according to the following scale of fees :—

Manures, ...	£1	0	0
Feeding Stuffs, ...	1	0	0
Water, Sanitary Analysis, ...	1	0	0
,, Full Analysis, ...	5	0	0
Soil, Analytical Examination and Recommendation of Manures, ...	1	10	0
,, Full Analysis, ...	5	0	0
Vegetable Products, such as Hay, Turnips, Grain, &c.,	1	10	0
Partial Analysis, viz., one constituent, . .	0	10	0
Estimation of Nitrates or Potash in a manure, .	0	10	0
Testing for Gross Adulteration, . . .	0	5	0

INSTRUCTIONS FOR SELECTING SAMPLES FOR ANALYSIS.

MANURES.

Four or more bags are to be selected for sampling. Each bag is to be emptied out separately on a clean floor, worked through with the spade, and one spadeful taken out and set aside. The four or more spadefuls thus set aside are to be mixed together until a uniform mixture is obtained. Of this mixture one spadeful is to be taken, spread on paper, and still more thoroughly mixed, any lumps which it may contain being broken down with the hand. Of this mixture two samples of about a pound each shall be taken by the purchaser or his agent, in the presence of the seller or his agent or two witnesses, and these samples shall be taken as quickly as possible and put into bottles or tin cases to prevent loss of moisture, and having been labelled, shall be sealed by the samplers—one sample to be retained by the association, and the other to be sent to the chemist for analysis.

FEEDING STUFFS.

Samples of feeding compounds are to be taken in a similar manner.

Samples of cake are to be taken by selecting three cakes, breaking each across the middle, and from the broken part breaking off a small piece. The three pieces thus obtained shall be wrapped up and sealed by the samplers, and sent for analysis as in the case of manures, and three duplicate pieces similarly sealed shall be retained by the association.

SOILS.

Dig a little trench about two feet deep, exposing the soil and subsoil. Cut from the side of this trench a perpendicular section of the soil down to the top of the subsoil, and about four inches wide. Extract it carefully, and do not allow the subsoil to mix with it. A similar section of subsoil immediately below this sample should be taken and preserved separately. Five or six similarly drawn samples should be taken from different parts of the field, and kept separate while being sent to the chemist, that he may examine them individually before mixing in the laboratory.

VEGETABLE PRODUCTS.

Turnips, &c., 20 to 30 carefully selected as fair average bulbs.

Hay and straw must be sampled from a thin section cut across the whole stack, and carefully mixed about; about 20 lbs. weight is required for analysis.

Grain should be sampled like manures.

WATERS.

Samples of water for analysis should not be put into ordinary wine bottles or stoneware jars stopped with corks, as these usually vitiate the samples. Clear glass Winchester quarts with glass stoppers should be used.

Cases containing these, chemically cleaned, are forwarded from the laboratory on application.

Well water should be allowed to run for some time before the sample is drawn.

Standing water from cisterns, tanks, ponds, &c., should be sampled by immersing the bottle entirely under the water, and holding it, neck upwards, at least four inches below the surface.

Spring or stream water should be sampled in dry weather, by immersion if possible, but if not deep enough for that purpose, a perfectly clean cup or glass should be used for transferring the water to the bottle.

While the bottle is being filled the stopper should either be held in the hand by the top or laid on some perfectly clean place.

Samples should be despatched to the laboratory *immediately* after being taken.

LOCAL ANALYTICAL ASSOCIATIONS.

I. With the view of encouraging, as well as regulating the conduct of, Local Analytical Associations, the Society contributes from its funds towards their expenses a sum not exceeding £250 annually.

II. The amount of such contribution is to each association at the rate of 5s. for each full analysis, and 2s. 6d. for each partial analysis of manure or feeding stuff effected, or such proportion thereof as the above annual contribution may permit of. The pecuniary assistance thus offered is subject to the following conditions being complied with to the satisfaction of the Chemical Committee:—

1. That the rules of the association are submitted to and approved of by the Chemical Committee.
2. That it is a condition of participating in the grant that the association make analyses for members of the Highland and Agricultural Society, being farmers and not members of the local association, charging them the cost price to the association, less the amount recovered from the Society.
3. That the association is managed by a committee of practical farmers owning or occupying land in the district.
4. That the analyst employed is of acknowledged standing.
5. That the benefits of the grant apply only to analyses made for farmers, and that these subscribe towards the expenses of the association, subject to the exception in No. 2.
6. That each analysis represents at least one ton of bulk actually purchased and delivered to one or more members under guarantee, or at a specified price per unit of valuable ingredients.
7. That the analysis has been made from a sample drawn after delivery, in accordance with the published instructions of the Society, and that a sealed duplicate sample has been retained.
8. That all analyses are reported according to forms furnished by the Highland and Agricultural Society, and that valuations of manures, if any are made, are calculated on a uniform standard to be issued periodically by the Society, and at least once a year.

III. (*a*) A general report regarding the analyses for which the Society has contributed payment is submitted to the general meeting in January, and full details concerning all manures and feeding stuffs whose analyses show any of the valuable constituents to be deficient to the extent of one-tenth of the amount guaranteed, or whose total deficiencies represent as much as one-tenth of the value of the manure or feeding stuff, are published annually in the *Transactions*.

(*b*) Before such publication is made, the seller must be communicated with, so that any explanations he has to offer may be obtained.

In the case of every analysis showing the deficiency above described, the secretary of the association must lose no time in communicating with the seller, in order that no deterioration may take place in the duplicate sample, which must, as soon as possible, be forwarded to the Secretary of the Highland and Agricultural Society, along with any explanation received from the seller.

(*d*) Should the seller be dissatisfied with the results obtained by the analyst of the association, a further analysis may, at his option, be made from the duplicate sample by another analyst to be chosen by the Society, and at its cost, if the further analysis exonerates the seller, if otherwise, at the seller's cost.

IV. The report of each analysis for which a grant is claimed must be sent to the Secretary of the Highland and Agricultural Society on or before the 1st November of each year, written on a schedule, containing the following particulars :—

Kind of manure or feeding stuff, and quantity purchased.
Names and addresses of seller and of buyer, and names of witnesses present at sampling.
Cash price per ton, or per unit, and value (if made) according to the Society's units of valuation.
Time and place of sampling.
Analysis guaranteed, and analysis found.

These schedules are supplied by the Secretary of the Society on application, and no grant is given for any analysis whose schedule is not accurately filled up.

The actual analytical reports of the association's analyst need not accompany the schedules, but must be forwarded if desired.

MANURES—THEIR COMPOSITION AND CHARACTERISTICS.

Nitrate of Soda.—The most valuable nitrogenous manure. Perfectly soluble and immediately available for the nourishment of the plant. Feebly retained by the soil. Rapidly goes down to the subsoil, and improves its texture. Benefits deeply-rooting plants. Increases leaf and straw more than grain.

Good samples contain 95 per cent. or upwards of pure nitrate of soda, equivalent to about 19 per cent. of ammonia.

Five parts of nitrate of soda equal 1 of ammonia.

Sulphate of Ammonia.—A more concentrated nitrogenous manure than the preceding, but not quite so valuable to the farmer. Perfectly soluble, but not so rapid in its action as nitrate of soda. It is somewhat firmly retained by the soil, and not so liable as nitrate of soda to be washed out by heavy rains. It is therefore more suitable than nitrate for wet districts. Increases leaf and stem more than grain. Applied to grass, it checks the growth of clover and leguminous plants.

Good samples contain 93 per cent. or more of pure sulphate of ammonia, equivalent to from 24 to 25 per cent. of ammonia.

About four parts of sulphate of ammonia equal 1 of ammonia.

Dried Blood.—A nitrogenous manure, which differs from the above in being insoluble. It must be decomposed in the soil before it yields up its nitrogen to the plant, and this it does only slowly. The nitrogen is in the form of albumen, and is capable of yielding from 12 to 16 per cent. of ammonia.

Horn Dust.—An insoluble nitrogenous manure, capable of yielding 16 to 18 per cent. of ammonia. When in the form of fine sawdust, it decomposes easily, and is a good nitrogenous manure even for cereals.

Horn, when in the form of chips or coarse shavings, decomposes extremely slowly, and is not suitable for manure.

Shoddy or Wool Waste.—An insoluble nitrogenous material used by manure manufacturers as a source of ammonia in dissolved manures. It is capable of yielding from 5 to 10 per cent. of ammonia, but is unsuitable for direct application as a manure.

Leather.—A very insoluble nitrogenous material, yielding about 9 per cent. of ammonia, used by manure manufacturers, but possessing no interest for the farmer.

Peruvian Guano.—A general manure formed of the excrements of fish-eating birds, and containing nitrogenous compounds, phosphates, and potash.

High-class Peruvian guano is rich in nitrogenous matter, a large proportion of which is soluble. As now imported, it is capable of yielding from 8 to 12 per cent. ammonia, part of which is derived from ammonia salts, and part (less than 1 per cent.) from nitrates. Phosphates are low, seldom exceeding 30 per cent., but from one-quarter to one-half of the phosphates is soluble. The amount of potash is small, usually from 3 to 5 per cent.

Low-class Peruvian guano, as now imported, is poor in nitrogenous matter, yielding only from 3 to 5 per cent. ammonia. The phosphates are correspondingly high, viz., from 30 to 50 per cent., but the proportion of soluble phosphate is much smaller than in high class Peruvian guano. Potash occurs to a very small extent, viz., about 1 to 3 per cent.

Low-class guanos are formed from high-class guanos, by the washing out of soluble constituents by rain, &c., and their composition varies greatly according to the amount of washing they have undergone.

Genuine Peruvian guano frequently contains a large proportion of stony insoluble matter.

Ichaboe Guano.—A general manure, but of recent formation. It is very rich in nitrogenous matter, which yields from 10 to 16 per cent. of ammonia, but a large part of the nitrogenous matter is in the form of feathers, which are insoluble and of low manurial value.

The total phosphates vary from 18 to 30 per cent., of which from a fourth to a half is usually soluble. There is seldom more than 2 per cent. potash present.

Fish Guano.—Derived from fish-curing yards, and consisting of the heads and offal of fish, dried and ground. Properly speaking, it is not a guano. The name guano is properly applied only to the dung of birds.

High-class fish guano contains nitrogenous matter, yielding from 10 to 12 per cent. of ammonia, but it is in the form of insoluble albuminous compounds, which only very slowly decompose and become available as plant food. The phosphates range from 18 to 30 per cent., and are all insoluble.

Low-class fish guanos are substances like the preceding, but containing less nitrogenous matter and more phosphates. They are simply bone manures, with somewhat more ammonia and less phosphate than ordinary bone meal, and having no real resemblance to a guano.

Fish guanos are usually impregnated with fish oil, which detracts from the value of the manure. The oil varies from 3 to 10 per cent.

Fray Bentos Guano.—The dried and ground residue and débris of animals after the extraction of "Liebeg's Extract." It is not a guano. It contains nitrogenous matter and phosphates, both of which are insoluble and slow in their action as manures. It varies in composition, yielding from 6 to 12 per cent. ammonia, from 16 to 35 per cent. phosphates, and a small proportion of potash.

Bone Meal.—Chiefly a phosphatic manure, but containing also nitrogenous matter. Phosphates range from 44 to 53 per cent. according to the purity of the bones, and are insoluble. The nitrogenous matter is capable of yielding from 4 to 5 per cent. ammonia, and is also insoluble. There is usually 3 per cent. or more of oil in bones, and this retards its action as a manure. The finer ground it is the more speedy is its action.

Bone Dust.—A coarser ground bone than the preceding.

Crushed Bones.—Still coarser ground.

Steamed Bone Flour.—Bones which have been subjected to steam at high pressure for the extraction of glue or gelatine. The residue contains from 56 to 65 per cent. phosphates and from 1 to 2 per cent. ammonia. It is white coloured and friable, and can be crushed with the hand. It is able to be, and ought to be, ground to a fine flour. Owing to this latter character, it is the most active form of bone manure.

Pure Dissolved Bones.—Bones dissolved in sulphuric acid and dried with bone ash or bone char, or other bone material. It contains usually less than 20 per cent. soluble phosphate, about 10 per cent. or upwards of insoluble phosphate, and yields from 2½ to 3½ per cent. ammonia.

Dissolved Bones.—A compound manure consisting of any kind of mixture of phosphatic and nitrogenous materials which can be dissolved, with (or without) an admixture of bone, so as to produce a manure containing from 15 to 30 per cent. soluble phosphates, and from 1 to 3 per cent. ammonia.

Vitriolated Bones.—Bones which have been moistened with sulphuric acid, and thereafter allowed to heat in large heaps for a long time. Good samples contain from 6 to 12 per cent. soluble phosphate, with from 30 to 40 per cent. insoluble phosphate, and yield from 3 to 4 per cent. ammonia.

Superphosphates.—Phosphates dissolved with sulphuric acid. Their composition varies according to the richness of the phosphate from which they are made, and the extent to which they have been dissolved.

High-class Superphosphates are made from phosphates containing a high percentage of phosphate of lime, and are very thoroughly dissolved. They should contain between 30 and 40 per cent. soluble phosphate, and very little insoluble phosphate.

Medium Superphosphates contain at least 23 per cent. soluble phosphate, and all below that are

Low-class Superphospates made from minerals poor in phosphate of lime, or insufficiently dissolved.

Mineral Phosphates exist in great variety, and contain very various proportions of phosphate of lime, viz., from 20 to 90 per cent. They are of use as manures only when they are ground to the finest flour. Even when ground very finely, some are so hard and insoluble as to be of no use as manures.

Compound Manures.—These are general manures containing nitrogenous matter, phosphates, and potash, and their value depends not only on the amounts of these constituents, but also on their fineness of division, their solubility, and the skill displayed in their manufacture.

The general character of a few of the more common of these may be indicated thus :—

Turnip Compounds.—These usually contain from 25 to 35 per cent. phosphates, of which the half or more is soluble, and nitrogenous matter, capable of yielding from 2 to 4 per cent. of ammonia, and sometimes 1 or 2 per cent. of potash.

Potato Compounds.—These are somewhat like the preceding, but contain usually less phosphate and a little more ammonia, from 3 to 6 per cent.; sometimes they contain no potash, but more frequently about 3 or 4 per cent. is present, and in some instances twice as much.

Bean Compounds.—These may contain from 10 to 20 per cent. phosphates, nitrogenous matter yielding from 3 to 7 per cent. of ammonia, and usually a considerable proportion of potash, often as much as from 6 to 10 per cent.

Cereal Compounds.—These usually contain about 20 per cent. phosphates, mostly soluble, and nitrogenous matter, yielding from 3 to 6 per cent. ammonia, and seldom contain potash.

Grass Compounds.—These are somewhat like the preceding, but may contain less phosphates and more nitrogen, part of which may be in the form of nitrate.

RELATIVE ACTIVITY OF MANURES.

Nitrogen.—Most active in—1st, nitrates; 2nd, ammonia salts; 3rd, high-class Peruvian and Ichaboe guanos; 4th, high-class dissolved compounds; 5th, dried blood; 6th, steamed bone flour; 7th, fish guano and fine bone meal; 8th, rape cake and cotton cake dust; 9th, bone dust and crushed bones.

Phosphates.—Most active in—1st, superphosphates and dissolved phosphates derived from any source; 2nd, precipitated and reverted phosphates; 3rd, steamed bone flour; 4th, bone ash; 5th, Charleston and similar phosphates ground to the finest flour, 6th, bone meal and fish guano; 7th, bone dust and crushed bones.

HINTS ON THE APPLICATION OF MANURES.

NITROGENOUS MANURES.

Nitrate of Soda.—Apply as a top dressing to the braird. Showery weather advantageous. Heavy rains cause loss. Two half doses with fortnight interval better than one whole dose. Increases straw more than grain.

Sulphate of Ammonia.—Apply as top dressing after sowing, not after brairding. Increases grass, diminishes clover. More suitable than nitrate for wet districts.

High Class Guanos.—Apply with the seed, or partly as top dressing. Useful for young grass and early potatoes.

Dissolved Compounds.—Apply with the seed.

Dried Blood.—Apply a month before sowing, if possible. If applied with the seed, useful for root-crops only.

Fish Guano.—Best on warm, open land, and in moist climates. Apply as early as possible. Should not contain more than 3 per cent. oil.

Leather and Shoddy.—Of no value to the farmer.

PHOSPHATIC MANURES.

Superphosphate.—Best phosphate for clayey soils. Suits medium soils. Makes early crop, therefore good for late districts. Increases grain more than straw.

Precipitated Phosphate.—Best on medium and light land.

Steamed Bone Flour.—Should be finely ground and applied early. Best on light soils or on moorland. Suits wet climates. Excellent improver of light pastures. Quicker than bone meal in its action.

Bone Ash.—Generally applicable. Best on light land.

Bone Meal.—Should be as fine as possible and applied early. Best on light, free soils, and on sandy soils.

Mineral Phosphate.—Must be ground to the finest flour, and feel soft and chalky. Best on moorland and land rich in organic matter. Should be applied very early.

Bone Dust and Crushed Bones.—Suitable for vine borders.

PHOSPHATIC MANURES.—Applied alone, frequently fail to give a full crop. Some nitrogenous manure ought to be mixed with them.

Potassic Manures.—Useful where potatoes or beans are grown, or where straw is sold. Increases clover. Seldom required where much dung is used. Sometimes injurious if applied with the seed. Should be applied very early.

Lime.—Best when coarsely ground, sown broadcast, and allowed to slake on the land. Better slaked in large heap, and then carted on and spread, than slaked in small heaps on land. Better two small limings than one big one. Best results on clay land and moorland. Liming *on the lea* prevents finger-and-toe, but frequently fails to do so if applied to stubble.

NOTES REGARDING ANALYSES.

I. MANURES.

The three items of greatest importance in manures are phosphoric acid, nitrogen, and potash.

1. **Phosphoric Acid** is present in manures as such, and also as phosphates of lime, magnesia, iron, and alumina.

Phosphate of Lime is most important, and exists in two states, insoluble and soluble.

Insoluble—

Insoluble phosphate of lime, called also
Tricalcic phosphate, and
Tribasic phosphate of lime.
} contains about 46% phosphoric acid.

Soluble—

Soluble phosphate of lime, called also
Acid phosphate of lime, and *erroneously*
Monobasic phosphate of lime,
} contains about 61% phosphoric acid.

Some analysts prefer to state the soluble phosphate as

Bishosphate of lime, called also
Monobasic phosphate,
} contains about 72% phosphoric acid.

The soluble phosphates are usually stated as equivalent to so much tricalcic phosphate.

Soluble phosphate, multiplied by 1⅓
Biphosphate, ,, ,, 1½
} gives the equivalent of tricalcic phosphate nearly.

Much confusion has arisen from the various methods of stating soluble phosphate. To escape from this confusion it has now become the custom to consider the term "soluble phosphate" *to mean* "phosphate of lime rendered soluble." *In other words, soluble phosphate means its equivalent of tricalcic phosphate.*

Phosphate of magnesia occurs in small quantity in bones, &c., and is usually reckoned as tricalcic phosphate.

Phosphates of iron and alumina, when occurring in *small quantity*, are usually reckoned as tricalcic phosphate, but if the quantity is considerable it should be separately estimated.

2. **Nitrogen** occurs in manures mostly in three forms—Ammonia salts, nitrates, and albuminoid matter.

Ammonia sulphate (pure), contains 25¾% ammonia.
Ammonium chloride (pure), ,, 31¾ ,,
Nitrate of soda (pure), contains 16·47% nitrogen, equal to 20% ammonia.
Albuminoid matter contains about 16% nitrogen, equal to about 19% ammonia, most of which sooner or later becomes available as plant food.

3. **Potash** is found in small amount in most manures, and should be reckoned as anhydrous potash (K_2O).

Sulphate of potash (pure), contains potassium = 54% anhydrous potash.

Muriate of potash (pure), contains potassium = fully 63% anhydrous potash.

II. FEEDING STUFFS.

These are chiefly concentrated forms of food whose value depends on the amounts they contain of albuminoids, oil, and carbohydrates.

Albuminoids are compounds containing nitrogen, and more or less resemble dry flesh in their composition. They are sometimes called *flesh formers.* They are the most valuable constituents of feeding stuffs. The percentage of nitrogen contained in a cake multiplied by 6¼ gives the percentage of albuminoids.

Carbohydrates are compounds such as sugar, starch, gum, and cellulose. These are sometimes called *heat-producers.*

Woody fibre is the name given to that part of the cellulose which is insoluble when boiled in weak solutions (5%) of acids and alkalies, and is therefore considered indigestible.

Good linseed, cotton, and rape cakes should contain from 4% to 5% nitrogen, about 10% oil, and about 6% ash.

Useful Factors.

Amount of	Multiplied by	Gives corresponding amount of
Nitrogen	1·214	Ammonia.
"	6·3	Albuminoid matter.
Ammonia	3·882	Sulphate of Ammonia.
"	3·147	Muriate of Ammonia.
"	3·706	Nitric Acid.
"	5·0	Nitrate of Soda.
Potash (anhydrous)	1·85	Sulphate of Potash.
"	1·585	Muriate of Potash.
Phosphoric acid (anhydrous)	2·183	*Phosphate of Lime.
" "	1·4	Biphosphate.
" "	1·648	Soluble Phosphate (monocalcic tribasic).
Soluble Phosphate†	1·325	Phosphate of Lime
Biphosphate	1·566	Phosphate of Lime.
Lime	1·845	Phosphate of Lime.
"	1·786	Carbonate of Lime.

* By phosphate of lime is meant tricalcic phosphate ($3CaO, P_2O_5$).

† Monocalcic tribasic phosphate ($CaO, 2H_2O, P_2O_5$).

The following are the forms in which analyses of *ordinary genuine* manures and feeding stuffs must be reported :—

I. Reports of Analyses of *MANURES.*

(*On the one side are the analytical details, and on the other the valuable constituents, which alone are considered in estimating the value of manure.*)

1. Form of Analysis for Superphosphates, Dissolved Bones, and the like.

Phosphoric Acid, in a soluble state, ...	......
Do., in an insoluble state, .	......
Lime, ...	......
Sulphuric Acid, Organic Matter, &c., . .	......
Sand and insoluble matter,	......

Capable of yielding as valuable constituents.

Phosphate of Lime, dissolved, . .	......	......
Do. undissolved, .	......	
Ammonia, ...	......	

2. Form of Analysis for Bones, Bone Meal, Fish Guano, and the like.

Phosphoric Acid, . .	......
Lime, ...	......
Alkalies, &c., ...	......
Organic matter, . . .	......
Moisture, ...	......
Sand and insoluble matter,	......

Capable of yielding as valuable constituents.

Phosphate of Lime, .	......
Ammonia, ...	......

3. Form of Analysis for Mixed Manures, Peruvian and Ichaboe Guanos, and the like.

Phosphoric Acid, in a soluble state, ...	......
Do., in an insoluble state, .	......
Lime, ...	......
Alkalies, &c., ...	......
Organic Matter and Ammonia Salts, .	......
Moisture, ...	......
Sand and insoluble matter,	......

Capable of yielding as valuable constituents.

Phosphate of Lime, dissolved, . .	......	......
Do., undissolved, .	......	
*Potash, ...		......
*Nitrates = Ammonia	......	......
Ammonia . .	......	

II. Reports of Analyses of *FEEDING STUFFS.*

Valuable Constituents,	Albuminoid compounds, . .	......
	Oil, ...	......
	Carbohydrates, ...	......
	Woody Fibre, ...	......
	Moisture, ...	......
	Ash, ...	......
	Nitrogen, . . .	

* Estimated only if requested.

UNITS FOR VALUATION OF MANURES,

By which the COMMERCIAL values of manures may be determined on strictly CASH PRICES at sea-ports, bags not included.
January 1883.

	Ammoniacal Guanos Genuine as Imported.		Fish Manures.		Dissolved Manures (including Dissolved Bones and other Compounds.)				Superphosphates.			Steamed Bone Flour.		Bones.			Ground Mineral Phosphates.		Sulphate of Ammonia.	Nitrate of Soda.
Classes	1st.	2nd.	1st.	2nd.	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	1st.	2nd.	1st.	2nd.	3rd.	1st.	2nd.		
	s. d.	*s. d.*	*s. d.*	*s. d,*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Phosphates dissolved, . .	3 6	3 6	...	...	3 6	3 6	3 6	3 6	3 0	2 9	2 9	...	...	...	...	...	...	...	...	...
„ undissolved, .	2 6	2 3	2 6	2 3	2 0	1 9	1 6	1 3	1 9	1 6	1 3	2 6	2 3	2 3	2 2	2 0	1 10	1 6	...	...
Ammonia, ...	19 6	18 6	17 0	16 0	18 0	17 0	16 0	13 0	...	...	...	17 0	17 0	16 0	15 0	14 0	...	...	17 0	13 0
Potash, ...	4 6	4 6	...	...	4 6	4 6	4 6	4 6	...	...	...	...	...	...	...	...	...	...	...	...

CLASSIFICATION OF MANURES,

Showing how the above classes are to be determined, a margin being allowed of 2 units total phosphates; also of one-half unit ammonia in manures containing at least 6 per cent. ammonia, and of one quarter unit ammonia in manures containing less than 6 per cent. ammonia.

	Class.	Phosphates.	Amount of Ammonia.	Fineness.
			Per cent.	
Ammoniacal Guanos Genuine as Imported, ...	1st.	...	6 or over.	
	2nd.	...	Under 6.	
Fish Manures (including so-called Fish Guano), ...	1st.	...	6 or over.	
	2nd.	...	under 6.	
Dissolved Manures (including Dissolved Bones and other Compounds), ...	1st.	The half of total phosphates dissolved, and	6 or over, and	Not containing more than 2 per cent. material that will not pass ¼ inch sieve.
	2nd.	Less than the half of total phosphates dissolved, or	3 or over, and	Not containing more than 4 per cent. do.
	3rd.	Containing not less than 25 per cent. total phos., and	1·75 or over, and	Not containing more than 8 per cent. do.
	4th.	Containing less than 25 per cent. phosphates, or	Under 1·75, or	Containing more than 8 per cent. do.
Superphosphates, . . .	1st.	Containing not less than 35 per cent. phos. dissolved.	...	
	2nd.	Containing not less than 25 per cent. phos. dissolved.	...	
	3rd.	Containing less than 25 per cent. phos. dissolved.	...	
Bones, ...	1st.	Containing not less than 50 per cent. phosphates, and	4 or over, and	90 per cent. passing through ⅛ inch sieve.
	2nd.	Containing not less than 50 per cent. phosphates, and	4 or over, and	90 per cent. passing through ¼ inch sieve.
	3rd.	Containing less than 50 per cent. phosphates, or	Under 4, or	Less finely ground.
Steamed Bone Flour, . . .	1st.	Containing not less than 55 per cent. phosphates, and	1·5, and	90 per cent. in state of actual flour.
	2nd.	Containing less than 55 per cent. phosphates, or	Under 1·5, or	Less finely ground.
Ground Mineral Phosphates, .	1st.	...	...	80 per cent. passing through No. 80 wirecloth.
	2nd.	...	...	Less finely ground.

The above units do not represent agricultural values, but are based upon the present commercial prices, viz., STRICTLY CASH PRICES at sea-ports. They are intended for the use of the members of the Highland and Agricultural Society, to enable them to determine approximately from the results of analysis what is the market price of a manure, and are alone to be used by chemists in valuing manures for Local Analytical Associations who receive the Society's grant.

LOCAL ANALYTICAL ASSOCIATIONS WHO HAVE RECEIVED THE SOCIETY'S GRANT.

	County.	Name of Association.	Name and Address of Secretary.	Number of Analyses.		Grants obtained.					
				1882.	1883.	1882.			1883.		
						£	s.	d.	£	s.	d.
1	Aberdeen, .	Alford Analytical Association,	Charles M'Connach, Cairnballoch, Alford,	...	13	...			3	5	0
2	„ .	Buchan Farmers' Analytical Association,	Thomas Forrest, Mains of Ludquharn, Longside,	21	17	5	5	0	4	5	0
3	Caithness, .	Caithness Farmers' Analytical Association,	George Brown, Watten Mains, Caithness,	17	18	4	5	0	4	10	0
4	Dumfries, . .	Annandale Farmers' Club, .	John Baird, jun., and John A. Mackenzie, Lockerbie,	...	13	...			3	5	0
5	Forfar, . .	Arbroath Anal. Association,	David Falconer, Carmyllie, Arbroath, .	15	...	3	15	0	...		
6	„ . .	Carse of Gowrie Farmers' Analytical Association,	Alex. Anderson, Berryhill, Dundee, .	8	...	2	0	0	...		
7	Inverness, .	Inverness, Nairn, and Black Isle Anal. Association,	William Ross, Brecknish, Culloden, .	24	20	6	0	0	5	0	0
8	Kincardine, .	Kincardineshire Farmers' Club,	A. B. Annandale, Stonehaven, . .	9	7	2	5	0	1	15	0
9	Lanark, . .	Lanarkshire Anal. Assoc., .	James Lindsay, Eastfield, Thankerton,	24	25	5	17	6	5	17	6
10	Orkney, . .	Orkney Agricultural Society,	James Johnstone, jun., Hall of Tankerness, Kirkwall,	8	9	2	0	0	2	5	0
11	Perth, . . .	Strathearn Anal. Assoc., .	James Patterson, Henhill, Forteviot, .	27	28	6	15	0	6	10	0
12	Ross, . . .	Easter Ross „ „ .	John Gordon, Balmuchy, Fearn, . .	17	12	4	5	0	3	0	0
13	„ . . .	Wester Ross „ „ .	Walter Arras, Fodderty Lodge, Dingwall,	22	6	5	10	0	1	10	0
14	Roxburgh, .	Kelso Anal. Association, .	T. Balmer Dove, Kelso, ...	27	34	6	5	0	7	17	6
15	Stirling, . .	Menteith Private Analytical Association,	John Murray, Munnieston, Thornhill, Stirling,	2	...	0	7	6	...		
				221	202	£54	10	0	£49	0	0

PREMIUMS.

GENERAL REGULATIONS FOR COMPETITORS.

All reports must be legibly written, and on one side of the paper only; they must specify the number and subject of the Premium for which they are in competition; they must bear a distinguishing motto, and be accompanied by a sealed letter similarly marked, containing the name and address of the Reporter—initials must not be used.

No sealed letter, unless belonging to a Report found entitled to at least one-half of the premium offered, will be opened without the author's consent.

Reports for which a Premium, or one-half of it, has been awarded, become the property of the Society, and cannot be published in whole or in part, nor circulated in any manner, without the consent of the Directors. All other papers will be returned to the authors, if applied for within twelve months.

When a Report is unsatisfactory, the Society is not bound to award the whole or any part of a premium.

All Reports must be of a practical character, containing the results of the writer's own observation or experiment, and the special conditions attached to each Premium must be strictly fulfilled. General essays, and papers compiled from books, will not be rewarded. Weights and measurements must be indicated by the Imperial standards.

The Directors, before awarding a Premium, shall have power to require the writer of any report to verify the statements made in it.

The decisions of the Board of Directors are final and conclusive as to all Premiums, whether for Reports or at General or District Shows; and it shall not be competent to raise any question or appeal touching such decisions before any other tribunal.

The Directors will welcome papers from any Contributor on any suitable subject not included in the Premium List; and if the topic and the treatment of it are both approved, the Writer will be remunerated, and his paper published.

CLASS I.

REPORTS.

SECTION 1.—THE SCIENCE AND PRACTICE OF AGRICULTURE.

FOR APPROVED REPORTS.

1. On the Agriculture of the County of Lanark—Forty Sovereigns. To be lodged by 1st November 1883.

The Report should embrace full details of the different systems of Farm Management observed in the County, and of the progress which Agriculture and other industries have made within the last 25 years.

2. On the Agriculture of the County of Stirling—Twenty Sovereigns. To be lodged by 1st November 1883.

The Report should embrace full details of the different systems of Farm Management observed in the County, and of the progress which Agriculture and other industries have made within the last 25 years.

3. On the Agriculture of the County of Wigtown—Twenty-five Sovereigns. To be lodged by 1st November 1883.

The Report should embrace full details of the different systems of Farm Management observed in the County, and of the progress which Agriculture and other industries have made within the last 25 years.

4. On the results of experiments for fixing and retaining the volatile and soluble ingredients in farm-yard manure—Twenty Sovereigns. To be lodged by 1st November 1883.

The Report must detail the treatment adopted to fix and retain these ingredients—the materials used for that purpose—and the quantity and cost thereof—comparative analyses of the manure with and without the treatment, and also a statement of the crops grown with manure and without such treatment, must be given by the Reporter. The experiments to have extended over at least two years and crops.

5. On the results of experiments for ascertaining the comparative value of farm-yard manure obtained from cattle fed upon different varieties of food, by the application of such manures to farm crops—Twenty Sovereigns. To be lodged by 1st November in any year.

The Report must state the effects produced on two successive crops by the application of manure obtained from cattle fed on different sorts of food, such as turnips and straw alone; and turnips and straw, with an addition of oil-cake, linseed, bean-meal, grain or other substances. The animals should be as nearly as possible of the same age, weight, condition, and maturity, and each lot should receive daily the same quantity of litter; and, except as to the difference of food, they must be treated alike.

The preparation of the manure, by fermentation or otherwise, should be in every respect the same; and it is desirable that not less than two several experiments be made with each kind, and that the ground to which it is to be applied be as equal as possible in quality and condition.

6. On the means successfully employed for obtaining new Agricultural Plants, or new and superior varieties, or improved sub-varieties, of any of the cereal grains, grasses, roots, or other agricultural plants at present cultivated in this country—Medals, or sums of Money not exceeding Fifty Sovereigns. To be lodged by 1st November in any year.

It is necessary that the varieties and sub-varieties reported upon shall have been proved capable of reproduction from seed, and also that the relation they bear to others, or well-known sorts, should be stated. The Reporter is further requested to mention the effects that he may have observed produced by different soils, manures, &c., on the plants forming the subject of report, and how far he may have ascertained such effects to be lasting.

Should any improved variety reported upon be the result of direct experiment by cross impregnation, involving expense and long-continued attention, a higher premium will be awarded.

7. On the hardy and useful Herbaceous Plants of any country where such climate exists as to induce the belief that the plants may be beneficially introduced into the cultivation of Scotland—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November in any year.

Attention is particularly directed to the Grains and Grasses of China, Japan, the Islands of the Eastern Archipelago, the Himalaya country, the Falkland and South Sea Islands, California, and the high north-western district of America.

Reporters are required to give the generic and specific names of the plants treated of, with the authority for the same—together with the native names, so far as known; and to state the elevation of the locality and nature of the soil in which they are cultivated, or which they naturally inhabit, with their qualities or uses; and it is further requested that the descriptions be accompanied, in so far as possible, with specimens of the plants, and their fruit, seed, and other products.

8. On the adulteration of Agricultural Seeds, whether by colouring, mixing, or otherwise, and the best means of detecting the same, and preventing their sale—Ten Sovereigns. To be lodged by 1st November 1883.

9. On the comparative advantages of fattening Cattle in stalls, in loose houses or boxes, and in sheds or hammels—Twenty Sovereigns. To be lodged by 1st November in any year.

The Report must detail the comparative result of actual experiments. The same quantities and kinds of food must be used. Information is required as to the comparative expense of attendance, the cost of

erecting the buildings, and any other circumstance deserving of attention. The state of the weather during the experiment, in point of temperature and wetness, and the advantages or disadvantages of clipping cattle put up to feed, must be particularly noted and reported.

10. On experiments for ascertaining the actual addition of weight to growing or fattening Stock, by the use of different kinds of food—Twenty Sovereigns. To be lodged by 1st November in any year.

The attention of the Experimenter is directed to turnips, carrots, beet, mangold-wurzel, potatoes, cabbage, as well as to beans, oats, barley, Indian corn, linseed, oil-cake or rape-cake, and to the effect of warmth and proper ventilation, and the difference between food cooked and raw. The above roots and other kinds of food are merely suggested; competitors are neither restricted to them nor obliged to experiment on all of them.

When experiments are made with linseed and cake, attention should be paid to the comparative advantages, economically and otherwise, of the substance in these two states.

Before commencing the comparative experiments, the animals must be fed alike for some time previously.

The progress of different breeds may be compared. This will form an interesting experiment of itself, for Reports of which encouragement will be given.

N.B.—The experiments specified in the two previous subjects must be conducted over a period of not less than three months. No lot shall consist of fewer than four Cattle or ten Sheep. The animals selected should be of the same age, sex, and breed, and, as nearly as possible, of the same weight, condition, and maturity. The live weight before and after the experiment must be stated, and, if killed, their dead weight and quantity of tallow.

11. On the Blackfaced Breed of Sheep, and the means that have been or might be used for its improvement—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November 1883.

12. On the influence of Soil and Geological Formation in the production of Disease in Animals—Ten Sovereigns. To be lodged by 1st November 1883.

13. On the effect of Sewage upon the Animal System, introduced either with drinking water or with herbage when sewage has been used as a top-dressing—Ten Sovereigns. To be lodged by 1st November 1883.

14. On a description of any scheme whereby Town or Village Sewage or Excreta has been successfully used in Agriculture or Horticulture—Twenty Sovereigns. To be lodged by 1st November in any year.

The scheme described must have been in operation for at least two years —the description to include (1) the quantity of sewage or excreta used per acre, and the mode in which it is applied; (2) the annual cost per acre; (3) the kind, amount, and value of the crops obtained per acre.

15. On the improvement of Hill Pasture without breaking up—The Gold Medal or Ten Sovereigns. To be lodged by 1st November 1884.

> The writer to detail the results of practical experiments carried on by himself or others.

16. On any useful practice in Rural Economy adopted in other countries, and susceptible of being introduced with advantage into Scotland—The Gold Medal. To be lodged by 1st November in any year.

> The purpose chiefly contemplated by the offer of this premium is to induce travellers to notice and record such particular practices as may seem calculated to benefit Scotland. The Report to be founded on personal observation.

SECTION 2.—ESTATE IMPROVEMENTS.

FOR APPROVED REPORTS.

1. By the Proprietor in Scotland who shall have executed the most judicious, successful, and extensive improvement—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November in any year.

> Should the successful Report be written for the Proprietor by his resident factor or farm manager, a Minor Gold Medal will be awarded to the writer in addition to the Gold Medal to the Proprietor.
>
> The merits of the Report will not be determined so much by the mere extent of the improvements, as by their character and relation to the size of the property. The improvements may comprise reclaiming, draining, enclosing, planting, road-making, building, and all other operations proper to landed estates. The period within which the operations may have been conducted is not limited, except that it must not exceed the term of the Reporter's proprietorship.

2. By the Proprietor in Scotland who shall have erected on his estate the most approved Farm-buildings—The Gold Medal. Reports, Plans, and Specifications to be lodged by 1st November in any year.

3. By the Proprietor or Tenant in Scotland who shall have reclaimed within the ten preceding years not less than forty acres of waste land—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November in any year.

4. By the Tenant in Scotland who shall have reclaimed within the ten preceding years not less than twenty acres of waste land—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November in any year.

5. By the Tenant in Scotland who shall have reclaimed not less than ten acres within a similar period—The Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November in any year.

The Reports in competition for Nos. 3, 4, and 5 may comprehend such general observations on the improvement of waste lands as the writer's experience may lead him to make, but must refer especially to the lands reclaimed—to the nature of the soil—the previous state and probable value of the subject—the obstacles opposed to its improvement—the details of the various operations—the mode of cultivation adopted—and the produce and value of the crops produced. As the required extent cannot be made up of different patches of land, the improvement must have relation to one subject; it must be of a profitable character, and a rotation of crops must have been concluded before the date of the Report. *A detailed statement of the expenditure and return* and a certified measurement of the ground are requisite.

6. By the Proprietor or Tenant in Scotland who shall have improved within the ten preceding years the pasturage of not less than thirty acres, by means of top-dressing, draining, or otherwise, without tillage, in situations where tillage may be inexpedient—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November in any year.

7. By the Tenant in Scotland who shall have improved not less than ten acres within a similar period—The Minor Gold Medal. To be lodged by 1st November in any year.

Reports in competition for Nos. 6 and 7 must state the particular mode of management adopted, the substances applied, the elevation and nature of the soil, its previous natural products, and the changes produced.

SECTION 3.—HIGHLAND INDUSTRIES AND FISHERIES,

FOR APPROVED REPORTS.

1. On the Best Means of Developing the Oyster Fisheries of Scotland—Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November 1883.

2. On the Best Means of reconciling the conflicting Interests of Trawlers and other Fishermen—Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November 1883.

3 On the Best Means of Developing the Eel Fishing of Scotland, and of conveying the Fish to English Markets—Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November 1884.

4. On the Best Mode of Utilising Fish Products or Offal of Scotland—Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November 1884.

SECTION 4.—MACHINERY.

FOR APPROVED REPORT.

1. On the best and most improved Cattle Truck for feeding and watering the animals in transit—Twenty Sovereigns. To be lodged by 1st November 1883.

Reports must be accompanied with drawings and description, or, if necessary, by a model.

SECTION 5.—FORESTRY DEPARTMENT.

FOR APPROVED REPORTS.

1. By the Proprietor in Scotland who shall, within the five preceding years, have planted not less than 150 acres—The Gold Medal. To be lodged by 1st November in any year.

The whole planting operations which may have been conducted by the Reporter within the five years, whether completed or not, must be embraced, and he must state the expense—description of soils—age, kind, and number of trees planted per acre—mode of planting, draining, and fencing—general state of the plantation—and any other observations of interest.

2. On Plantations of not less than eight years' standing, formed on deep peat bog—The Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November 1883.

The premium is strictly applicable to deep peat or flow moss; the condition of the moss previous to planting, as well as at the date of the Report, should, if possible, be stated.

The Report must describe the mode and extent of the drainage, and the effect it has had in subsiding the moss—the trenching, levelling, or other preliminary operations that may have been performed on the surface—the mode of planting—kinds, sizes, and numbers of trees planted per acre—and their relative progress and value, as compared with plantations of a similar age and description grown on other soils in the vicinity.

3. On the more extended introduction of hardy, useful, or ornamental Trees, which have not hitherto been generally cultivated in Scotland—The Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November in any year.

The Report should specify as distinctly as possible the kind of trees introduced. The adaptation of the trees for use or ornament, and their comparative progress should be mentioned. Attention is directed to the introduction of any tree as a nurse in young plantations, which by growing rapidly for several years, and attaining maturity when at the height of 20 or 25 feet, might realise the advantage and avoid the evils of thick planting.

4. On the varieties of Trees best adapted for planting as shelter in the Islands of Scotland—The Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November 1883.

5. On the old and remarkable Walnut Trees in Scotland—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November 1883.

Details of their growth, measurements, and condition, and any particulars of their history, must be given. The measurements to be taken by the Reporter himself, and at 5 feet from the ground, if possible. Photographs and drawings are desirable.

6. On the old and remarkable Horse Chestnut Trees in Scotland—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November 1883.

Details of their growth, measurements, and condition, and any particulars of their history, must be given. The measurements to be taken by the Reporter himself, and at 5 feet from the ground, if possible. Photographs and drawings are desirable.

7. On the old and remarkable Cedars of Lebanon in Scotland—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November 1884.

Details of their growth, measurements, and condition, and any particulars of their history, must be given. The measurements to be taken by the Reporter himself, and at 5 feet from the ground, if possible. Photographs and drawings are desirable.

8. On the old and remarkable English Yews in Scotland—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November 1884.

Details of their growth, measurements, and condition, and any particulars of their history, must be given. The measurements to be taken by the Reporter himself, and at 5 feet from the ground, if possible. Photographs and drawings are desirable.

9. On the most suitable varieties of Trees, adapted to various soils and altitudes, to be left as standards in cutting down plantations, with a view to the encouragement of a healthy undergrowth of herbage and grasses for the purpose of grazing cattle and sheep, with a list of those grasses and forage plants best adapted for growth in the locality under such conditions—Ten Sovereigns. Reports to be lodged by 1st November 1883.

Reports need not be confined to Scotland. Information is desired from such countries as India.

10. On the deterioration in quality and durability of Home-Grown Timber at the present day, especially regarding Scotch Fir, as compared with the timber of the old Scotch forests, and suggestions for a remedy—The Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November 1883.

11. On the cutting and transport of Firewood (soft and hard wood), with detailed statement of charges—The Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November 1883.

In many districts large branches and tops of trees are burned up, which in England, and much more on the Continent, are sold at a profit. The Report should state the system pursued, and contain practical suggestions for utilising fragments now destroyed.

12. On the more extended cultivation in Scotland of Charcoal-producing Plants, for gunpowder or commercial purposes—The Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November 1883.

Reference to be made to suitable varieties of plants not generally grown in this country for that purpose, such as *Rhamnus Frangula*, prices realisable, and suggestions for their more general introduction, treatment, &c.

13. On the Woods, Forests, and Forestry in the county of Perth—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November 1883.

14. On the Woods, Forests, and Forestry in the county of Ross—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November 1883.

15. On the Woods, Forests, and Forestry in the county of Inverness—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November 1883.

16. On the utilisation of waste produce of Forests and Woodlands—The Gold Medal, or Ten Sovereigns. To be lodged by 1st November 1883.

17. On the Insects most injurious to Forest Trees, and the diseases occasioned by them, and the best means of prevention—Twenty Sovereigns. To be lodged by 1st November 1883.

The Report to be accompanied, where practicable, by specimens of the insects.

18. On the Effects of the Snowstorm of December 1882 on Trees and Shrubs in different localities in Scotland, with detailed statistics of losses—The Medium Gold Medal, or Five Sovereigns. To be lodged by 1st November 1883.

CLASS II.

DISTRICT COMPETITIONS.

The Money Premiums and Medals awarded at District Competitions will be issued in January next. No payments must, therefore, be made by the Secretary or Treasurer of any local Association.

Grants in aid of DISTRICT COMPETITIONS *for* 1884 *must be applied for before* 1*st* NOVEMBER 1883, *on Forms to be obtained from the Secretary.*

When a Grant has expired, the District cannot apply again for aid for five years.

SECTION 1.—CATTLE.

Note.—The Society's Cattle Premiums are granted to each District for three alternate years, on condition that the District shall, in the two intermediate years, continue the Competitions by offering for the same description of Stock a sum not less than one-half of that given by the Society.

At the intermediate Competitions, three Minor Silver Medals will be placed at the disposal of the Committee, to be given along with the first prize in the three Classes of Cattle, provided there are not fewer than three lots exhibited in each Class.

The selection of the Breed is left to the local Committee. See Rule 6.

DISTRICTS.

1. DISTRICT OF THE DEESIDE UNION.—*Convener*, Colonel Innes of Learney, Torphins; *Secretary*, James Shaw, Tillyching, Lumphanan. Granted 1879.
2. DISTRICT OF LORN.—*Convener*, Colonel M'Dougall of Dunollie, Oban; *Secretary*, Donald Macgregor, Solicitor, Oban. Granted 1879.
3. DISTRICT OF INVERARAY.—*Convener*, James Wyllie, Inveraray; *Secretary*, Hugh Smith, Inveraray. Granted 1881.
4. CENTRAL BANFFSHIRE.—*Convener*, George Kynoch, jun., Keith; *Secretary*, J. Geddes Brown, Keith. Granted 1880.
5. STIRLINGSHIRE.—*Convener*, Sir James R. Gibson-Maitland of Barnton, Bart., Craigend, Stirling; *Secretary*, Robert Taylor, 22 Barnton Place, Stirling. Granted 1880.
6. ISLANDS OF MULL, COLL, AND TIREE.—*Convener*, James Noel Forsyth of Quinish, Tobermory; *Secretary*, Robert Lang, Aros Mains, Aros, Mull. Granted 1880.
7. RENFREWSHIRE.—*Convener*, Lieut.-Colonel Sir Archibald C. Campbell of Blythswood, Bart., Renfrew; *Secretary*, William Bartlemore, County Buildings, Paisley. Granted 1880.
8. DISTRICT OF BUCHAN.—*Convener*, John Sleigh, Strichen; *Secretary*, James Smith, Burnshangie, Strichen. Granted 1882.

PREMIUMS.

1.	Best Bull, 3-year old and upwards, of any pure breed, ...	£3
	Second Best, ...	£2
	Third best, ...	£1
2.	Best Bull, 2-year old and under, of any pure breed, ...	£3
	Second best, ...	£2
	Third best, ...	£1
3.	Best 2-year old Heifer (if Highland breed, 3 years), of any pure breed,	£3
	Second best, ...	£2
	Third best, ...	£1
		£18

The dates of calving of cattle will be counted as from on and after January 1, except Polled Angus and Aberdeen, which will be counted as from on and after December 1.

In 1883.

Nos. 1 and 2 are in competition for the last year.
No. 3 for the second year.
Nos. 4, 5, 6, 7, and 8 compete for Local Premiums.

SECTION 2.—HORSES.

FOR AGRICULTURAL PURPOSES.

Note.—The Society's Stallion Premiums are granted to each District for two years, and are followed by Premiums for other two years for Brood Mares, and again for a similar period by Premiums for Entire Colts and Fillies.

1. STALLIONS.

1. LOWER WARD OF RENFREWSHIRE.—*Convener,* Horatio R. B. Peile, Mansion House, Greenock; *Secretary,* John W. Crawford, 26 Hamilton Street, Greenock. Granted 1882.
2. VALE OF ALFORD.—*Convener,* R. O. Farquharson of Haughton, Alford; *Secretary,* John Leonard, Farmton, Alford. Granted 1882.
3. LOWER ANNANDALE.—*Convener,* A. H. Johnstone Douglas of Lockerbie, Glen Stuart, Annan; *Secretary,* William Roddick, Annan. Granted 1882. (In abeyance in 1882.)
4. KIRRIEMUIR DISTRICT AGRICULTURAL ASSOCIATION.—*Convener,* T. M. Nicoll, Littleton, Kirriemuir; *Secretary,* Andrew Osler, Kintyrie, Kirriemuir. Granted 1883.
5. DUNBLANE, DOUNE, AND CALLANDER FARMERS' CLUB.—*Convener,* Sir James R. Gibson-Maitland of Barnton, Bart., Craigend House, Stirling. *Secretary,* John Murray, Munnieston, Thornhill, Stirling. Granted 1883.

PREMIUMS.

Best Stallion, rising 3 and not above 12 years old.
Nos. 1, 2, and 3 receive a Premium of £25 each.
Nos. 4 and 5 receive a Premium of £15 each.

In 1883.

Nos. 1 and 2 are in competition for the last year.
Nos. 3, 4, and 5 for the first year.

2. BROOD MARES.

. DISTRICT OF CUPAR AND ST. ANDREWS.—*Convener*, David Bayne Meldrum of Kincaple, St. Andrews; *Secretary*, William Dingwall, Ramornie, Ladybank. Granted 1882.

2. NAIRNSHIRE.—*Convener*, Robert Anderson of Lochdhu, Nairn; *Secretary*, John Joss, Budgate, Cawdor. Granted 1882.

3. EARL OF SELKIRK'S TENANTRY AND DISTRICT.—*Convener*, Andrew Lusk, Howell, Kirkcudbright; *Secretary*, John Gibson, Kirkcudbright. Granted 1882.

4. DISTRICT OF CENTRAL STRATHEARN.—*Convener*, John Kerr, Rossie Ochil, Bridge of Earn; *Secretary*, Robert Gardiner, Chapel Bank, Auchterarder. Granted 1882.

5. DISTRICT OF ESKDALE AND LIDDESDALE.—*Convener*, William Little of Whithaugh, Burnfoot, Ewes, Langholm; *Secretary*, Thos. Stevenson, Langholm. Granted 1883.

6. MORAYSHIRE.—*Convener*, Robert M'Kessack, of Ardgye and Roseisle Forres; *Secretary*, William Macdonald, Caledonian Bank Buildings Elgin. Granted 1883.

PREMIUMS.

1. Best Brood Mare,	£4
Second best,	£3
	£7

In 1883.

Nos. 1, 2, 3, and 4 are in competition for the last year.
Nos. 5 and 6 for the first year.

3. ENTIRE COLTS AND FILLIES.

1. EASTERN DISTRICT OF BERWICKSHIRE.—*Convener*, John Allan, Redheugh, Cockburnspath; *Secretary*, James Gibson, Guns-green, Ayton. Granted 1882.

2. DISTRICT OF LAUDERDALE.—*Convener*, George M'Dougal, Blythe, Lauder; *Secretary*, Thomas Broomfield, Lauder. Granted 1882.

3. MACHARS DISTRICT OF WIGTOWNSHIRE.—*Convener*, Sir Herbert E. Maxwell of Monreith, Bart., M.P., Port-William; *Secretary*, Charles M. Routledge, Banker, Port-William. Granted 1882.

4. COUNTY OF PEEBLES.—*Convener*, Lord Arthur Cecil, Orchard Mains, Innerleithen; *Secretaries*, William Riddell, Howford, Peebles; and A. Alexander, West Linton. Granted 1882.

5. EASTERN DISTRICT OF STIRLINGSHIRE.—*Convener*, Ralph Stark of Summerford, Falkirk; *Secretary*, Thomas Binnie, Falkirk. Granted 1882.

6. DISTRICT OF LESMAHAGOW SOCIETY.—*Convener*, Gavin Hamilton o Auldtown, Lesmahagow; *Secretary*, John Hamilton, British Linen Co. Bank, Lesmahagow. Granted 1883.

7. DISTRICT OF CARRICK.—*Convener*, John Rankine of Beoch, Lochland, Maybole; *Secretary*, David Brown, Maybole. Granted 1883.

PREMIUMS.

1.	Best Entire Colt, foaled after 1st January 1881,	£2	0	0
	Second best,	£1	0	0
2.	Best Entire Colt, foaled after 1st January 1882,	£2	0	0
	Second best,	£1	0	0
3.	Best Filly, foaled after 1st January 1881,	£2	0	0
	Second best,	£1	0	0
	Third best,	£0	10	0
4.	Best Filly, foaled after 1st January 1882,	£2	0	0
	Second best,	£1	0	0
	Third best,	£0	10	0
		£13	0	0

In 1883.

Nos. 1, 2, 3, 4, and 5 are in competition for the last year.
Nos. 6 and 7 for the first year.

SECTION 3.—SHEEP.

Note.—The Society's Sheep Premiums are granted to each District for three alternate years, on condition that the District shall, in the two intermediate years, continue the Competitions by offering for the same description of Stock a sum not less than one-half of that given by the Society.

At the intermediate Competitions, four Minor Silver Medals will be placed at the disposal of the Committee, to be given along with the first prize in the four Classes of Sheep, provided there are not less than three lots exhibited in each Class.

The selection of the Breed is left to the local Committee. See Rule 6.

DISTRICTS.

1. DISTRICT OF THE BORDER UNION SOCIETY.—*Convener*, Lord Polwarth, Mertoun House, St. Boswells; *Secretary*, John Usher, 25 Bridge Street, Kelso. Granted 1878. (In abeyance in 1880.)
2. DISTRICT OF ATHOLE AND WEEM.—*Convener*, Archibald Butter of Faskally, Pitlochry; *Secretary*, James Mitchell, Solicitor, Pitlochry. Granted 1879.
3. DISTRICT OF THE UNITED EAST LOTHIAN SOCIETY.—*Convener*, Sir Hew Dalrymple of North Berwick, Bart., Luchie, North Berwick; *Secretaries*, Richardson & Gemmell, Haddington. Granted 1879.
4. DISTRICT OF NETHER LORN.—*Convener*, Donald Johnston, Kilbride, Easdale, Oban; *Secretary*, Angus Whyte, Easdale, Oban. Granted 1879.
5. DISTRICT OF ARGYLE.—*Convener*, Sir John W. P. Campbell Orde of Kilmory, Bart., Lochgilphead; *Secretary*, A. M'Nair, Ri-Cruin, Lochgilphead. Granted 1879.
6. DISTRICT OF DUNOON.—*Convener*, A. S. Finlay of Castle Toward, Greenock; *Secretary*, Archibald Mitchell, junior, Clydesdale Bank, Dunoon. Granted 1880.
7. DISTRICT OF DALKEITH.—*Convener*, Sir James Gardiner Baird of Saughton Hall, Bart., Inch House, Liberton; *Secretary*, William Harper, Sheriffhall Mains, Dalkeith. Granted 1880.
8. UPPER WARD OF LANARKSHIRE.—*Convener*, John Ord Mackenzie of Dolphinton; *Secretary*, David Oswald, Abington. Granted 1880.

9. District of Lochaber.—*Convener*, D. P. M'Donald, Invernevis, Fort-William; *Secretary*, N. B. Mackenzie, British Linen Co. Bank, Fort-William. Granted 1880.
10. County of Forfar.—*Convener*, Charles Lyall, Old Montrose, Montrose; *Secretary*, Alexander M. Thomson, Accountant, Arbroath. Granted 1882.
11. County of Caithness.—*Convener*, Alexander Henderson of Stemster, Thurso; *Secretary*, James Brims, Solicitor, Thurso. Granted 1882.

Premiums.

1.	Best Tup above One-Shear,	£2
	Second best,	£1
2.	Best Shearling Tup,	£2
	Second best,	£1
3.	Best 3 Ewes above One Shear,	£2
	Second best,	£1
4.	Best 3 Gimmers or Shearling Ewes,	£2
	Second best,	£1
		£12

In 1883.

Nos. 1, 2, 3, 4, and 5 are in competition for the last year.

Nos. 6, 7, 8, 9, 10, and 11 compete for local Premiums.

Section 4.—SWINE.

Note.—The Society's Swine Premiums are granted to each District for three alternate years, on condition that the District shall, in the two intermediate years, continue the Competitions by offering for the same description of Stock a sum not less than one-half of that given by the Society.

At the intermediate Competitions two Minor Silver Medals will be placed at the disposal of the Committee, to be given along with the first prize in the two Classes of Swine, provided there are not fewer than three lots exhibited in each Class.

Premiums.

1.	Best Boar,	£2
	Second best,	£1
2.	Best Brood Sow,	£2
	Second best,	£1
		£6

In 1883.

No application has been received.

Section 5.—DAIRY PRODUCE.

Note.—The Society's Dairy Produce Premiums are granted to each District for three alternate years, on condition that the District shall, in the two intermediate years, continue the Competitions by offering for the same description of Stock a sum not less than one-half of that given by the Society.

At the intermediate Competitions, two Minor Silver Medals will be placed at the disposal of the Committee, to be given along with the first prize in the two Classes of Dairy Produce, provided there are not less than three lots exhibited in each Class.

DISTRICT.

FORTH DAIRY PRODUCE AND CATTLE SHOW SOCIETY.—*Convener*, Thomas Nimmo, Lawhead, Forth, Lanark ; *Secretary*, James Haig, Forth, Lanark. Granted 1883.

PREMIUMS.

1. Best Couple of Sweet Milk Cheeses, ...	£2
Second best, ...	£1
2. Best Cured Butter (not less than 14 lbs.), ...	£2
Second best, ...	£1
	£6

In 1883.

The District of Forth is in competition for the first year.

RULES OF COMPETITION.

1. The Members of the Highland and Agricultural Society connected with the respective districts are appointed Committees for arranging the Competitions, the Convener being appointed by the Directors : five members to be a quorum.

2. The Convener of each District shall summon a meeting of Committee for the purpose of determining the time and place of Competition, the nomination of Judges, and other preliminary arrangements. The time and place (which must be within the bounds of the District, unless in reference to Stallions) shall be publicly intimated by Conveners.

3. The Money Premiums awarded at District Competitions will be paid in January next, by precepts issued by the Directors. No payments must, therefore, be paid by the Secretary or Treasurer of any local Association. Medals will be issued at same time.

4. Stock must be the property of the Exhibitor at the date of Entry. *No entry shall be received later than one week previous to the Show.* Entry-Money shall not exceed 2½ per cent. on the amount of the Premium to be competed for.

5. The Competitions (except for Stallions to serve in the District) must take place between the 1st of April and the 26th of October, and are open to general competition to all parties within the boundaries of the District of the local Society, whether members of the local Association or not. The Stallion Premiums are open to all comers, or the Horses may be selected at the Glasgow Stallion Show on permission to that effect being obtained.

6. The Committee shall select the breed, and specify it in the returns. In Cattle the animals exhibited must belong to one of the following pure breeds—Shorthorn, Ayrshire, Polled (Galloway, Angus, or Aberdeen), Highland. The Bulls may be of one breed, and the Heifers of another. In Sheep, the breeds must be Leicester, Cheviot, or Blackfaced.

7. Stock of an inferior description, or which does not fall within the prescribed regulations, shall not be placed for competition.

8. The Premiums shall not be divided. In Cattle, Horses (except Stallions to serve in the district), Sheep, and Swine, five lots in each Class will warrant the award of full, and three lots of half, Premiums. In Dairy Produce, eight Exhibitors in any one Class will warrant an award of full, and four of half, Premiums. A Competitor may exhibit two lots in each class, except in Dairy Produce, where only one lot is allowed from the same farm. No animal to be allowed to compete in more than one section.

9. To authorise the award of the Medals in the intermediate year, there must be not less than three lots in each Class, and the Society's Regulations must be adhered to.

10. An animal which has gained the Highland and Agricultural Society's first Money Premium at a previous District or General Show is inadmissible

in the same Class (except in the case of Stallions); and one which has gained a second Money Premium can only thereafter compete in that Class for the first.

11. A Bull the property of two or more Tenants may compete, although the Exhibitors may not be Joint-Tenants.

12. Bulls for which Money Premiums are awarded may be required to serve in the District at least one season; the rate of service to be fixed by the Committee, and the prizes may be withheld till the conditions are fulfilled. Premiums for the Heifers may be retained till the animals are certified to have calved.

13. Evidence must be produced that the Prize Stallions have had produce.

14. Mares must have foals at foot (except when death of foal is certified), or be entered as being in foal; in the latter case payment of the Premiums will be deferred till certificate of birth, which must be within 11 months from the date of the Show.

15. All Prize Tups must serve within the District during the season following the Competition. Ewes and Gimmers must be taken from the Exhibitor's stock, and must have been bred by him in the District; and Ewes must have reared Lambs during the ordinary season of the District.

16. Sheep must have been clipped bare during the season, and the Judges are instructed to examine the fleeces of the sheep selected for prizes, and to cast those on which they find any of the former fleece. Fleeces must not be artificially coloured.

17. Should it be proved to the satisfaction of the Committee that an animal has been entered under a false name, pedigree, or description, for the purpose of misleading the Committee or Judges as to its qualifications or properties, the case shall be reported to the Directors, and submitted by them to the first General Meeting, in order that the Exhibitor may be disqualified from again competing for the Society's Premiums, and his name, if he is a member, struck from the roll, or his case otherwise disposed of as the Directors may determine.

18. When an animal has previously been disqualified by the decision of any Agricultural Association in Great Britain or Ireland, such disqualification shall attach, if the Exhibitor, being aware of the disqualification, fail to state it and the grounds thereof, in his entry, to enable the Committee to judge of its validity.

19. Competitors must certify that the Butter and Cheese exhibited by them are average specimens of the produce of their dairies in 1883, and that the quantity produced during the season has not been less than 1 cwt. of Butter, or 2 cwt. of Cheese.

20. It is to be distinctly understood that in no instance does any claim lie against the Highland and Agricultural Society for expenses attending a show of stock beyond the amount of the Premiums offered.

21. Blank reports will be furnished to the Conveners and Secretaries of the different Districts. These must, in all details, be completed, and lodged with the Secretary *on or before the* 1*st of November next*, for the approval of the Directors, against whose decisions there shall be no appeal.

22. A report of the Competitions and Premiums awarded at the *intermediate* local shows in the several Districts for Cattle and Sheep, signed by a member of the Society, must be transmitted to the Secretary *on or before the* 1*st of November in each year*, otherwise the Society's grants shall terminate.

23. When a grant has expired, the District cannot apply again for aid for five years.

SECTION 6.—SPECIAL GRANTS.

£20 to the Ayrshire Agricultural Association, to be competed for at the Dairy Produce Show at Kilmarnock.—*Convener*, The Hon. G. R. Vernon, Auchans House, Kilmarnock ; *Secretary*, James M'Murtrie, Ayr. Granted 1872.

£3 to Unst Society for five consecutive years.—*Convener* and *Secretary*, Alex. Sandison, Uyasound, Unst. Granted 1879.

£3 to Orkney Agricultural Society.—*Convener*, Colonel Balfour of Balfour and Trenabie, Kirkwall ; *Secretary*, James Johnston, jun., Hall of Tankerness, Kirkwall. Granted 1883.

£3 to Rousay Agricultural Society.—*Convener*, General Burroughs of Rousay, C.B. ; *Secretary*, William Seatter, Saviskaill, Rousay. Granted 1883.

SECTION 7.—MEDALS IN AID OF PREMIUMS GIVEN BY LOCAL SOCIETIES.

The Society, being anxious to co-operate with local Associations, will give a limited number of Minor Silver Medals annually to Societies, not on the list of Cattle, Horse, or Sheep Premiums, in addition to the Money Premiums awarded in the Districts for—

1. Best Bull, Cow, Heifer of any pure breed, or Ox.
2. Best Stallion, Mare, or Gelding.
3. Best Tup, or Pen of Ewes or Wethers.
4. Best Boar, Sow, or Pig.
5. Best Coops of Poultry.
6. Best sample of any variety of Wool.
7. Best sample of any variety of Seeds.
8. Best managed Farm.
9. Best managed Green Crop.
10. Best managed Hay Crop.
11. Best managed Dairy.
12. Best Sweet Milk Cheese.
13. Best Cured Butter.
14. Best sample of Honey, not less than 5 lbs., taken without destroying the bees.
15. Best collection of Roots.
16. Best kept Fences.
17. Male Farm Servant who has been longest in the same service, and who has proved himself most efficient in his duties, and to have invariably treated the animals under his charge with kindness.
18. Female Servant in charge of Dairy and Poultry who has been longest in the same service, and who has proved herself most efficient in her duties, and to have invariably treated the animals under her charge with kindness.
19. Best Sheep Shearer.
20. Most expert Hedge Cutter.
21. Most expert Labourer at Draining.
22. Most expert Farm-Servant at trial of Reaping Machines.
23. Best Maker of Oat Cakes.

It is left to the local Society to choose out of the foregoing list the classes for which the Medals are to be competed.

The Medals are given for five consecutive years.

Aberdeenshire.

1. AUCHINDOIR, KILDRUMMIE, AND TOWIE ASSOCIATION. — *Convener*, Carlos P. Gordon of Wardhouse, Insch ; *Secretary*, William Walker, Ardhuncart, Mossat. 4 Medals. Granted 1881.
2. CLUNY, MONYMUSK, AND MIDMAR ASSOCIATION.—*Convener*, Ranald Macdonald, Cluny Castle, Aberdeen ; *Secretary*, James Christie, Backhill of Castle Fraser, Kemnay, Aberdeen. 2 Medals. Granted 1881.
3. CROMAR, UPPER DEE, AND DONSIDE ASSOCIATION.—*Convener*, Sir John Forbes Clark, Bart., Tillypronie, Tarland ; *Secretary*, William Thomson, Tarland. 4 Medals. Granted 1881.
4. EBRIESIDE ASSOCIATION.—*Convener*, Wm. Leask, Skilmafilly, Ellon ; *Secretary*, William Hetherwick, Knoxhill, Ellon. 5 Medals. Granted 1881.
5. FORMARTINE ROOT ASSOCIATION.—*Convener*, Captain Alexander C. Hunter of Tillery, Aberdeen ; *Secretary*, Thomas Duguid, Mosshead, Udny, Aberdeen. 2 Medals. Granted 1879.
6. FYVIE ASSOCIATION.—*Convener*, James Mackie, Lewes, Fyvie ; *Secretary*, James Ironside, Steinmanhill, Fyvie. 2 Medals. Granted 1880.
7. GARIOCH TURNIP GROWING ASSOCIATION.—*Convener*, Henry Gordon of Manar, Inverurie ; *Secretary*, James Stephen, Conglass, Inverurie. 2 Medals. Granted 1878. (In abeyance in 1881.)
8. KINELLAR HORTICULTURAL AND POULTRY ASSOCIATION.—*Convener*, Colonel William Ross King of Tertowie, Kinaldie, Aberdeen ; *Secretary*, Neil Smith, Blackburn, Aberdeenshire. 2 Medals. Granted 1879.
9. KINNETHMONT ASSOCIATION.—*Convener*, Col. Leith Hay of Rannes, C.B., Leith Hall, Kinnethmont ; *Secretary*, James R. Moir, 25 South Mount Street, Aberdeen. 5 Medals. Granted 1881.
10. LEOCHEL-CUSHNIE SOCIETY.—*Convener*, Sir William Forbes of Craigievar, Bart., Fintray House, Aberdeen ; *Secretary*, Alexander Strachan, Wester Fowlis, Alford. 3 Medals. Granted 1879.
11. MAR ASSOCIATION.—*Convener*, William Wishart, Cairntradlyn, Kinellar, Blackburn ; *Secretary*, Silvester Campbell, jun., Tofthills, Kintore. 2 Medals. Granted 1882.
12. NORTH-EAST ABERDEENSHIRE SOCIETY.—*Convener*, Sir Alexander Anderson, Aberdeen ; *Secretary*, G. A. Cruickshank, Nether Cortes, Lonmay. 6 Medals. Granted 1880.
13. NORTH OF SCOTLAND ROOT, VEGETABLE, AND FRUIT ASSOCIATION.—*Convener*, A. F. Nares, Brucktor, Old Meldrum ; *Secretary*, James Smith, Agent, Inverurie. 2 Medals. Granted 1881.
14. STRICHEN SOCIETY.—*Convener* and *Secretary*, John Sleigh, Strichen Mains, Strichen. 2 Medals. Granted 1882.

Argyllshire.

15. KINTYRE SOCIETY.—*Convener*, Colonel Mackay of Carskey, Campbeltown ; *Secretary*, James Hamilton, Royal Bank, Campbeltown. 4 Medals. Granted 1882.
16. MULL, COLL, AND TIREE.—*Convener*, James Noel Forsyth of Quinish, Tobermory ; *Secretary*, Robert Lang, Aros Mains, Aros, Mull. 4 Medals. Granted 1880.

Ayrshire.

17. BEITH SOCIETY.—*Convener*, William Bartlemore, County Buildings, Paisley ; *Secretary*, William Fulton Love, Writer, Beith, Ayrshire. 2 Medals. Granted 1881.

18. COYLTON AND STAIR SOCIETY.—*Convener*, Major-General Burnett of Gadgirth, Tarbolton; *Secretary*, Robert Caldwell, Knockshoggle, Stair. 2 Medals. Granted 1882.

19. CRAIGIE SOCIETY.—*Convener*, R. Drummond, Pocknave, Craigie, Kilmarnock; *Secretary*, Andrew M'Farlane, Schoolhouse, Craigie. 3 Medals. Granted 1881.

20. DALRY SOCIETY.—*Convener*, Andrew Allan, Munnoch, Dalry, Ayr; *Secretary*, Robert Craig, Flashwood, Dalry. 4 Medals. Granted 1879.

21. GALSTON HORTICULTURAL SOCIETY.—*Convener*, Robert Mackie, Draffen House, Stewarton; *Secretary*, Thomas Paterson, Galston. 3 Medals. Granted 1880.

22. KILMARNOCK SOCIETY.—*Convener*, Robert Guthrie, Crossburn, Troon; *Secretary*, Jas. Wilson, Banker, Kilmarnock. 4 Medals. Granted 1882.

23. LOUDOUN AND LANFINE SOCIETY.—*Convener*, Robert Mackie, Draffen House, Stewarton; *Secretary*, Andrew Cameron, Solicitor, Newmilns, Kilmarnock. 4 Medals. Granted 1879.

24. MUIRKIRK SOCIETY.—*Convener*, Robert Millar, Alloway Cottage, Ayr; *Secretary*, Alexander Donald, The Schoolhouse, Muirkirk. 6 Medals. Granted 1881.

25. NEW CUMNOCK.—*Convener*, John Picken, Mansfield Mains, New Cumnock; *Secretary*, William F. Haddow, Riggfoot, New Cumnock. 4 Medals. Granted 1881.

26. SORN AND DALGAIN SOCIETY.—*Convener*, James Somervell of Sorn, Mauchline; *Secretary*, Robert Brown, Dalgain, Sorn, Mauchline. 5 Medals. Granted 1879.

27. WEST KILBRIDE SOCIETY.—*Convener*, John Crawford, Milstonford, West Kilbride; *Secretary*, Malcolm Logan, Kirkland, West Kilbride. 5 Medals. Granted 1879.

Berwickshire.

28. EAST OF BERWICKSHIRE AGRICULTURAL ASSOCIATION.—*Convener*, Jonathan Melrose of Monynut, Coldstream; *Secretaries*, Bowhill & Doughty, Ayton. 3 Medals. Granted 1883.

Dumbartonshire.

29. KIRKINTILLOCH SOCIETY.—*Convener*, William Burt Wright, Auchinvole Castle, Croy; *Secretary*, Andrew Matson, National Bank of Scotland, Kirkintilloch. 4 Medals. Granted 1882.

30. WESTERN DISTRICT OF DUMBARTONSHIRE.—*Convener*, Sir James Colquhoun of Luss, Bart., Ross-dhu, Luss; *Secretary*, Colonel James Colquhoun, Arroquhar, Lochlomond. 2 Medals. Granted 1879.

Dumfriesshire.

31. MOFFAT AND UPPER ANNANDALE SOCIETY.—*Convener*, Walter Johnstone, Alton, Moffat; *Secretary*, Alexander Scott, Annandale Estates Office, Moffat. 4 Medals. Granted 1881.

Elginshire.

32. FORRES AND NORTHERN FAT CATTLE CLUB.—*Convener*, Richard H. Harris, Earnhill, Forres; *Secretary*, Robert Urquhart, jun., Forres. 6 Medals. Granted 1881.

Fifeshire.

33. WINDYGATES SOCIETY.—*Convener*, H. V. Haig of Bridgend, Cameron Bridge, Windygates; *Secretary*, J. F. Thom, Wellsgreen, East Wemyss. 2 Medals.. Granted 1882.

Inverness-shire.

34. STRATHSPEY CLUB.—*Convener*, Earl of Seafield, Castle Grant, Grantown; *Secretary*, F. Macbean, Writer, Grantown. 5 Medals. Granted 1881.

Lanarkshire.

35. CALDERWATERHEAD SOCIETY.—*Convener*, Peter Forrest, Shotts; *Secretary*, James Ferguson, Fairnieshaw, Holytown. 2 Medals. Granted 1881.
36. CARMUNNOCK FARMERS' SOCIETY.—*Convener*, Andrew Hoggan, jun., Busby Farms, Busby; *Secretary*, Andrew Robertson, Carmunnock. 2 Medals. Granted 1883.
37. CARNWATH SOCIETY.—*Convener*, Hector F. M'Lean, Carnwath House; *Secretary*, George Russell, Carnwath. 4 Medals. Granted 1878. (In abeyance in 1881 and 1882.)
38. OLD MONKLAND AGRICULTURAL SOCIETY.—*Convener*, Wm. J. Andrew, Banker, Coatbridge; *Secretary*, John Couper, Bank Buildings, Coatbridge. 1 Medal. Granted 1883.

Perthshire.

39. CULROSS SOCIETY.—*Convener*, John J. Dalgleish of West Grange; *Secretary*, James Thomson, Middle Grange, Bogside, Culross. 3 Medals. Granted 1879.
40. MOULIN ASSOCIATION.—*Convener*, Alexander Forbes, Pitfourie, Pitlochry; *Secretary*, R. M'Gillewie, Balnadrum, Pitlochry. 1 Medal. Granted 1881.
41. STORMONT UNION SOCIETY.—*Convener*, Sir Alex. Muir Mackenzie of Delvine, Bart.; *Secretary*, Robert Grant, The Pleasance, Coupar Angus. 5 Medals. Granted 1880.

Renfrewshire.

42. JOHNSTONE WEST OF SCOTLAND AGRICULTURAL SOCIETY.—*Convener*, Robt. Wilson, Manswraes, Kilbarchan; *Secretary*, Robert Reid, Banker, Johnstone. 2 Medals. Granted 1883.
43. LOCHWINNOCH SOCIETY.—*Convener*, William Bartlemore, County Buildings, Paisley; *Secretary*, William Logan of Cloak, Writer, Lochwinnoch. 2 Medals. Granted 1881.

Ross-shire.

44. BLACK ISLE SOCIETY.—*Convener*, James Fletcher of Rosehaugh, Avoch; *Secretary*, James R. Mitchell, Drynie, Inverness. 6 Medals. Granted 1879 and 1881.

Stirlingshire.

45. CAMPSIE, STRATHBLANE, AND BALDERNOCK SOCIETY.—*Convener*, Sir Charles E. F. Stirling of Glorat, Bart., Milton of Campsie; *Secretary*, William Horne, Newmill, Milton of Campsie. 2 Medals. Granted 1879.
46. KILSYTH SOCIETY.—*Convener*, James Patrick, Queenzieburn, Milton of Campsie; *Secretary*, R. M. Lennox, Writer, Kilsyth. 2 Medals. Granted 1880.

The Medals are given for five consecutive years.

Applications from other Districts must be lodged with the Secretary of the Society *by 1st November next.*

RULES OF COMPETITION.

1. All Competitions must be at the instance of a local Society.
2. The classes for which Medals are granted must be in accordance with the list at page 45. The Committee shall select the classes, and specify them in the return.
3. In each District the Convener (who must be a member of the Society appointed by the Directors) shall fix the time and place of Competition

appoint the Judges, and make all other necessary arrangements, in concurrence with the other Members of the Society, and the local Association of the District.

4. The Money Premiums given in the District must be £2 for each Medal claimed.

5. The Medal for Sheep Shearing shall not be awarded unless there are three competitors, and it shall always accompany the highest Money Premium. There must not be fewer than two competitors in all the classes.

6. Blank reports will be furnished to all the Conveners of the different Districts. These must, in all details, be completed and lodged with the Secretary *on or before the 1st of November next*, with the exception of green crop reports, which must be forwarded on or before the 20th of December, for the approval of the Directors, against whose decisions there shall be no appeal.

7. When a grant has expired, the District cannot apply again for aid for five years.

SECTION 8.—PLOUGHING COMPETITIONS.

The Minor Silver Medal will be given to the winner of the first or highest Premium at Ploughing Competitions, provided a Report in the following terms is made to the Secretary, within one month of the Competition, by a Member of the Society:—

FORM OF REPORT.

I of Member of the Highland and
Agricultural Society, hereby certify that I attended the Ploughing
Match of the Association at in the county
of on the when ploughs
competed; of land was assigned to each, and hours
were allowed for the execution of the work. The sum of £
was awarded in the following proportions, viz.:—
[Here enumerate the names and designations of successful Competitors.]

RULES OF COMPETITION.

1. All Matches must be at the instance of a local Society or Ploughing Association, and no Match at the instance of an individual, or confined to the tenants of one estate, will be recognised.

2. The title of such Society or Association, together with the name and address of the Secretary, must be registered with the Secretary of the Highland and Agricultural Society, 3 George IV. Bridge, Edinburgh.

3. Not more than one Match in the same season can take place within the bounds of the same Society or Association.

4. All reports must be lodged within one month of the date of the Match, and certified by a Member of the Highland and Agricultural Society who was present at it.

5. A Member can only report one Match, and a Ploughman cannot carry more than three Medals in the same season.

6. To warrant the grant of the Medal there must have been twelve ploughs in Competition, and Three Pounds awarded in Premiums by the local Society. The Medal to be given to the winner of the first or highest prize.

7. Ploughmen shall not be allowed any assistance, and their work must not be set up nor touched by others; on land of average tenacity the ploughing should be at the rate of an imperial acre in ten hours, and attention should be given to the firmness and sufficiency of the work below, more than to its neatness above the surface.

CLASS III.

COTTAGES AND GARDENS.

The following Premiums are offered for Competition in the Parishes after mentioned.

The Premiums for Cottages and Gardens are given for five consecutive years.

SECTION I.—PREMIUMS FOR BEST KEPT COTTAGES AND GARDENS.

1. Best kept Cottage,	. . . . .	£1	0	0
Second best,	. . . . . .	0	10	0
2. Best kept Cottage Garden,	. . .	1	0	0
Second best,	. . . . . .	0	10	0

Argyllshire.

1. COLL.—*Convener,* John Lorne Stewart of Coll; *Secretary,* J. A. Hain, Island of Coll, Oban. Granted 1882.
2. OBAN.—*Secretary,* Donald Macgregor, Solicitor, Oban. Granted 1880.

Dumbartonshire.

3. CARDROSS.—*Secretary,* Mrs Murray, Moore Park, Cardross. Granted 1881.

Edinburghshire.

4. CURRIE AND BALERNO.—*Convener,* Sir James H. Gibson-Craig of Riccarton, Bart., Currie; *Secretary,* Alexander Maltman, Rosebank, Currie. Granted 1881.

Fifeshire.

5. KINGSKETTLE HORTICULTURAL SOCIETY.—*Convener,* William Dingwall, Ramornie, Ladybank; *Secretary,* John Scott, Kettle Bridge, Kettle. Granted 1883.
6. NEWBURGH DISTRICT GARDENING SOCIETY.—*Convener,* John Lyell, Newburgh; *Secretaries,* George Anderson and Angus Cameron, Newburgh. Granted 1882.

Lanarkshire.

7. ABINGTON FLORAL AND HORTICULTURAL SOCIETY.—*Convener,* John Morton, Nether Abington, Abington; *Secretary,* George Hastie, Abington. Granted 1881.
8. LARKHALL HORTICULTURAL SOCIETY.—*Convener,* William Forrest of Lawmuir, Allanton, Hamilton; *Secretary,* Robert Cooper, jun., Braehead, Larkhall. Granted 1883.

Linlithgowshire.

9. Dalmeny and Queensferry Horticultural Society.—*Convener*, Peter Glendinning, Leuchold, Dalmeny Park, Edinburgh ; *Secretary*, John Allan, Dalmeny Park, Edinburgh. Granted 1879.
10. Kirkliston Horticultural Society.—*Convener*, Peter Glendinning, The Leuchold, Dalmeny Park, Edinburgh ; *Secretary*, James Brown, Schoolhouse, Kirkliston. Granted 1882.
11. Torphichen Horticultural Society.—*Convener*, Colonel Gillon of Wallhouse, Bathgate ; *Secretary*, Wm. Arbuckle, Torphichen, Bathgate. Granted 1882.

Perthshire.

12. Bridge of Earn Horticultural Society.—*Convener*, Thomas Richmond, Hilton, Perth ; *Secretary*, John Ellis, Bridge of Earn. Granted 1882.
13. Dunning Horticultural Society.—*Convener*, Robert Gardiner, Chapelbank, Auchterarder. *Secretary*, Johnstone Wright, Dunning. Granted 1880.

Ross-shire.

14. Edderton Society.—*Convener*, W. E. Catley of Edderton, Ross-shire ; *Secretary*, James Ross, Balblair, Edderton, Ross-shire. Granted 1882.
15. Wester Ross Horticultural Society.—*Convener*, Sir Kenneth S. Mackenzie of Gairloch, Bart.; *Secretary*, David Munro, 65 High Street, Dingwall. Granted 1881.

Stirlingshire.

16. Killearn Society.—*Convener*, David Edmond of Ballochruin, Balfron ; *Secretary*, John MacIntyre, Kirkhouse, Killearn. Granted 1879.

Sutherlandshire.

17. Skibo Association.—*Convener*, Evan C. Sutherland Walker of Skibo, Skibo Castle, Sutherland. Granted 1879.

Wigtownshire.

18. Inch.—*Convener*, The Earl of Stair, K.T., Lochinch, Castle Kennedy, Wigtownshire ; *Secretary*, Thomas C. Greig, Rephad, Stranraer. Granted 1879.

RULES OF COMPETITION.

1. Competitions may take place in the different parishes for Cottages and Gardens, or for either separately.

2. The occupiers of Lodges at Gentlemen's Approach Gates and Gardener's Houses are excluded, as well as others whom the Committee consider, from their position, not to be entitled to compete. The inspection must be completed by the 1st of October. In making the inspection, the Conveners may take the assistance of any competent judges.

3. It is left to the Committee of the District to regulate the maximum annual rent of the Cottages, which may, with the garden, be from £5 to £7.

4. To warrant the award of full Premiums, there must not be fewer than three competitors in each class.

5. A person who has gained the highest Premium cannot compete again.

6. If the Cottage is occupied by the proprietor, the roof must be in good repair ; if the roof is thatch, it must be in good repair, though in the occupation of a tenant. The interior and external conveniences must be clean and orderly—the windows must be free of broken glass, clean, and affording the means of ventilation. Dunghills, and all other nuisances, must be removed from the front and gables. In awarding the Cottage Premiums, preference will be given to Competitors who, in addition to the above requi-

sites, have displayed the greatest taste in ornamenting the exterior of their houses, and the ground in front and at the gables.

7. In estimating the claims for the Garden Premiums, the judges should have in view:—The sufficiency and neatness of the fences and walks; the cleanness of the ground; the quality and choice of the crops; and the general productiveness of the garden.

8. Reports, stating the number of Competitors, the names of successful parties, and the nature of the exertions which have been made by them, must be transmitted by the Conveners to the Secretary *on or before the 1st November next.*

9. When a grant has expired, the District cannot apply again for aid for five years.

Parishes desirous of these Premiums must lodge applications with the Secretary *on or before the 1st November next.*

SECTION 2.—MEDALS FOR COTTAGES AND GARDENS OR GARDEN PRODUCE.

The Society will issue annually two Minor Silver Medals to a limited number of local Associations or individuals, who at their own expense establish Premiums for Cottages or Gardens under £15 of Rent. The Medals may be awarded for best kept Cottage, and best kept Garden or Flower Plot, or Garden Produce.

Local Associations or individuals desirous of these Medals, must lodge applications with the Secretary *on or before the 1st November next.* The Medals are given for five consecutive years.

Aberdeenshire.

1. UDNY HORTICULTURAL SOCIETY.—*Convener*, Alexander Keith, Chapelton, Ellon; *Secretary*, Thomas Duguid, Mosshead, Udny. Granted 1881.

Ayrshire.

2. GALSTON HORTICULTURAL SOCIETY.—*Convener*, Robert Mackie, Draffen House, Stewarton; *Secretary*, Thomas Paterson, Galston. Granted 1881.
3. LOUDOUN HORTICULTURAL SOCIETY.—*Convener*, Robert Mackie, Draffen House, Stewarton; *Secretary*, George Neil, Greenhead Street, Newmilns, Kilmarnock. Granted 1883.

Dumbartonshire.

4. VALE OF LEVEN AND DUMBARTON HORTICULTURAL SOCIETY.—*Convener*, J. M. Martin of Auchendennan, Bloomhill, Cardross; *Secretary*, Arch. M'Dougall, 13 North Street, Alexandria, N.B. Granted 1879.

Edinburghshire.

5. LIBERTON AND NEWTON HORTICULTURAL SOCIETY.—*Convener*, Robert Black, Liberton Mains, Liberton; *Secretary*, James Anderson, Schoolhouse, Gilmerton. Granted 1882.

Elginshire.

6. DYKE HORTICULTURAL SOCIETY.—*Convener*, Hugh Brodie of Brodie, Brodie Castle, Forres; *Secretary*, J. Clark, Brodie Gardens, Forres. Granted 1882.

Fifeshire.

7. Kirkcaldy Horticultural Society.—*Convener*, William Drysdale of Kilrie, Kinghorn ; *Secretary*, John Leslie, West Mills, Kirkcaldy. Granted 1880.
8. Strathmiglo and District Horticultural Society.—*Convener*, Alexander Troup, Strathmiglo ; *Secretary*, James Somers, Postmaster, Strathmiglo. Granted 1883.

Haddingtonshire.

9. Pencaitland Horticultural Society—*Convener*, William Wilson, Wolfstar, Tranent ; *Secretary*, Peter Cossar, Pencaitland. Granted 1883.

Lanarkshire.

10. Biggar Horticultural Society—*Convener*, J. L. Murray of Heavyside, Biggar ; *Secretary*, Andrew Smail, Biggar. Granted 1883.
11. Carnwath Horticultural Society.—*Convener*, George Russell, Carnwath ; *Secretary*, David Aitken, Carnwath. Granted 1880.
12. Gartsherrie Works Horticultural Society.—*Convener*, Dr. Bruce Goff, Woodlea, Bothwell; *Secretary*, George R. Horne, Millside, Bothwell. Granted 1881.
13. Mauldslie and Rosebank Horticultural Society.—*Convener*, Colonel Hozier of Newlands, Mauldslie Castle, Carluke ; *Secretary*, Robert Gardiner, Millburn Lodge, Netherburn, Hamilton. Granted 1882.
14. New Victoria Gardens, Lily Bank Road, Glasgow.—*Secretary*, James Marshall, 28 Keir Street, Pollockshields, Glasgow. Granted 1878. (One year in abeyance.)
15. Saracen Public Gardens, Possil Park, Glasgow.—*Convener*, Walter Macfarlane, 22 Park Circus, Glasgow ; *Secretary*, Samuel Bankier, 8 Balmore Street, Possil Park, Glasgow. Granted 1879.
16. Shettleston Horticultural Society.—*Secretary*, James Mitchell, 12 East Muir Street, Shettleston. Granted 1881.

Nairnshire.

17. Auldearn Flower Show.—*Convener*, Hugh Brodie of Brodie, Brodie Castle, Forres ; *Secretary*, James Carson, Auldearn, Nairn. Granted 1880.

Perthshire.

18. Blairgowrie and Rattray Horticultural Society.—*Convener*, John Anderson, Royal Hotel, Blairgowrie ; *Secretary*, Henry Dryerre, 10 High Street, Blairgowrie. Granted 1880.
19. Breadalbane, Weem, Strathtay, and Grandtully Horticultural Society.—*Convener*, E. O. Douglas of Killiechassie, Aberfeldy; *Joint-Secretaries*, D. Macdiarmid, Bank of Scotland, Aberfeldy, and Peter Haggart, Keltneyburn, Aberfeldy. Granted 1879.
20. Caputh—*Convener*, Sir Alex. M. Mackenzie of Delvine, Bart., Dunkeld. Granted 1883.
21. Cherrybank Horticultural Society.—*Convener*, William Macdonald, Woodlands, Perth ; *Secretary*, William Law, Cherrybank, Perth. Granted 1882.
22. Dunkeld and Birnam Horticultural and Poultry Association.—*Convener*, John Macgregor, Ladywell, Dunkeld ; *Secretary*, Robert Robertson, Ladywell, Dunkeld. Granted 1880.

Renfrewshire.

23. **Renfrew Horticultural Society.**—*Convener*, William Herron, Renfrew; *Secretary*, Robert S. Milne, Renfrew.

Sutherlandshire.

24. **Golspie Horticultural Society.**—*Convener*, J. B. Dudgeon, Crakaig, Golspie; *Secretary*, Alexander Lindsay, Golspie.

REGULATIONS.

1. Competitions may take place in the different districts for Cottages and Gardens, or for either separately.

2. The annual value of each Cottage, with the ground occupied in the parish by a Competitor, must not exceed £15.

3. If Competition takes place for Garden Produce in place of the best kept Garden, such produce must be *bona fide* grown in the Exhibitor's Garden, and he will not be allowed to make up a collection from any other Garden.

4. To warrant the award of the Medals, there must not be fewer than three Competitors.

5. Blank reports will be furnished to the Conveners and Secretaries of the different Districts. These must, in all details, be completed and lodged with the Secretary *on or before the* 1*st November next*, for the approval of the Directors, against whose decisions there shall be no appeal.

6. When a grant has expired, the District cannot apply again for aid for five years.

SECTION 3.—IMPROVING EXISTING COTTAGES.

To the Proprietor in Scotland who shall report the Improvement of the greatest number of Cottages during the years 1880, 1881, and 1882—The Gold Medal.

SECTION 4.—BUILDING NEW COTTAGES.

To the Proprietor in Scotland who shall report the Erection of the greatest number of approved Cottages during the years 1879, 1880, 1881, and 1882—The Gold Medal.

RULES OF COMPETITION.

1. Claims for the Premiums Nos. 3 and 4 must be lodged with the Secretary on or before the 1st of October next, to allow an inspection to be made of the different Cottages. The inspection will be conducted by a Committee of the Society's Members, and Reports must be transmitted to the Secretary *on or before the* 1*st November next.*

2. The annual value of the Cottage or Cottages separately, with the garden ground, must not exceed £5.

3. In estimating the claims of the Competitors, the following points will be kept in view:—The external appearance of the Cottages; their internal accommodation; the arrangements of the out-houses; the means of drainage and ventilation; and the expense of the building or of the alteration, compared with its durability and accommodation. When the Cottages of one Competitor are superior in style and comfort to those of another, though not so numerous, the Inspectors will give them preference, provided they amount at least to three, and have been erected at a moderate expense.

4. Parties competing will forward to the Society Plans, Specifications, and Estimates, of which, and of all information sent therewith, copies may be taken for publication, if the Society shall see fit, and the originals returned to the parties within six months, if desired.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

GENERAL SHOW OF STOCK AND IMPLEMENTS

AT

INVERNESS,

ON THE FARM OF DALNEIGH,

ON 24TH, 25TH, 26TH, AND 27TH JULY 1883.

President of the Society.

HIS GRACE THE DUKE OF RICHMOND AND GORDON, K.G.

Chairman of the Local Committee.

THE RIGHT HON. LORD LOVAT.

The District connected with the Show comprises the Counties of Inverness, Elgin, Nairn, Ross and Cromarty, Caithness, Sutherland, and Orkney (including Shetland).

REGULATIONS.

GENERAL CONDITIONS.

1. The Competition is open to Exhibitors from all parts of the United Kingdom.

2. Every Lot must be intimated by a Certificate of Entry, lodged with the Secretary *not later than the* 1*st June for Implements, and* 15*th June for Stock and other Entries.* Printed forms will be issued on application to the Secretary, No. 3 George IV. Bridge, Edinburgh. Admission Orders will be forwarded to Exhibitors, by post, previous to the Show.

3. Protests against the awards of the Judges, or against a violation of the judging regulations, must be lodged with the Secretary not later than 9 A.M. on Wednesday, 25th July, and parties must be in attendance at the Committee-Room, in the Showyard, at 10 A.M. that day, when protests will be disposed of. All protests must be accompanied by the deposit of £2, 2s., and if not sustained the sum will be forfeited to the Society at the discretion of the Board.

4. Protests lodged for causes which the protestor produces no good evidence to substantiate, will render him liable to be reported to the Board of Directors, with the view, if they see reason, to his being prohibited from again entering stock for a General Show.

5. The Society shall not be liable for any loss or damage which Stock, Poultry, Implements, or other articles may sustain at the Show, or in transit.

6. The decisions of the Board of Directors are final in all questions respecting Premiums and all other matters connected with the Show, and it shall not be competent for any Exhibitor to appeal against such decisions to, nor seek redress in respect of them from, any other tribunal.

7. Covered Booths for Offices (9 feet by 9 feet), purely for business, not for exhibition of goods, can be had for £3, 10s. to Members, and £5 to Non-Members. Intimation to be made to the Secretary before the 1st of July.

8. No lights allowed in the Yard at night, and Smoking is strictly prohibited within the sheds. Those infringing this Rule will be fined 10s.

9. As the command of water in the Yard is limited, it is particularly requested that waste be avoided.

10. When the ground requires to be broken, the turf must be carefully lifted and laid aside, and the surface must be restored to the satisfaction of the Society, and at the expense of the Exhibitor.

11. All persons admitted into the Showyard shall be subject to the Rules and Orders of the Directors.

12. The violation by an Exhibitor of any one of the Regulations will involve the forfeiture of all Premiums awarded to him, or of such a portion as the Directors may ordain.

13. Railway Passes for unsold stock and implements must be applied for at the Committee Room in the Yard between 9 and 11 o'clock on the forenoon of Thursday and Friday.

14. The Show terminates at 5 P.M. on Friday, 27th July, and no animal or article can be withdrawn before that hour. Stock and Implements may remain in the Yard till Saturday afternoon.

15. The Premiums awarded will be paid in November 1883, and, with the exception of the Tweeddale Gold Medal and the Silver Medals, may be taken either in money or in plate.

STOCK AND POULTRY.

16. Stock and Poultry to be entered with the Secretary on or before the 15th day of June. Received in the Yard on Monday, 23rd, and till 10 A.M. on Tuesday, 24th July. Judged at 11 A.M. on Tuesday. Exhibited on Tuesday, Wednesday, Thursday, and Friday, 24th, 25th, 26th, and 27th July.

17. All animals must be entered in the sections applicable to their ages, and cannot be withdrawn after entry.

18. No animal to be allowed to compete in more than one section.

19. Shorthorn, Polled Angus or Aberdeen, and Galloway animals, must be entered in the herd books, or the exhibitor must produce evidence that his animal is eligible to be entered therein.

20. Stock must be *bona fide the property and in the possession of* the Exhibitor from the 15th June (the last day of Entry).

21. The schedule of Entry must be filled up so far as within the knowledge of the Exhibitor.

22. The name of the Breeder, if known, must be given, and if the Breeder is not known, a declaration to that effect, signed by the Exhibitor, must be sent along with the Schedule, and no pedigree will be entered in the Catalogue when the Breeder is unknown.

23. Should it be proved to the satisfaction of the Directors that an animal has been entered under a false name, pedigree, or description, for the purpose of misleading the Directors or Judges as to its qualification or properties, the case shall be reported to the first General Meeting, in order that the Exhibitor shall be disqualified from again competing at the Society's Shows, and his name, if he be a Member, struck from the roll, or his case otherwise disposed of as the Directors may determine.

24. An animal which has gained a first premium at a General Show of the Society cannot again compete in the same section.

25. When an animal has previously been disqualified by the decision of any Agricultural Association in Great Britain or Ireland, such disqualification shall attach, if the Exhibitor, being aware of the disqualification, fail to state it, and the grounds thereof, in his entry, to enable the Directors to judge of its validity.

26. Breeding Stock must not be shown in an improper state of fatness, and the Judges will be prohibited from awarding Premiums to overfed animals.

27. No animal shall bear on its rug, harness, pail, or other fittings, any initial, crest, or mark of ownership, nor be distinguished otherwise than by the number indicating its place in the Catalogue.

28. Exhibitors shall be answerable for all acts, whether committed by themselves, their servants, or others, and shall be responsible for the condition of their animals during the whole time they remain in the Showyard.

29. No animal to be taken out of its stall after 10 A.M. during the Show, except by order of the Judges, or with permission of the Secretary. Those infringing this Rule will be fined 10s.

30. Aged Bulls and Stallions must have had produce, and, along with Two-year-old Bulls, Three-year-old Colts, and aged Tups, have served within the year of the Show.

31. All Cows must have had calves previous to the Show, and when exhibited, they must either be in milk or in calf; if in milk, birth must have been within 9 months of the Show; if in calf, birth must be certified within 9 months after the Show. In the case of Ayrshire Cows in Calf, and Ayrshire Heifers in Calf, calved before 1st January 1881, birth must be certified within 9 months after the Show.

32. All Milch Cows of the Ayrshire breed must be in the yard on the evening of Monday, 23rd July, before 8 o'clock, after which they will be inspected by the Veterinary Surgeon, or other official of the Society, between 8 and 9 o'clock, to see if they have been milked dry; and if not, they must be milked under his direction, and, after the judging, all Milch Cows must be milked morning and evening.

33. Any artificial contrivance or device of any description found on or proved to have been used on an animal, either for preventing the flow of milk or for any other improper purpose, will disqualify that animal from being awarded a Premium, and the Owner of said animal will be prohibited from again entering stock for any of the Society's General Shows, or for such a period as the Directors may see fit.

34. Two-year-old Heifers—of the Shorthorn and Polled Breeds—must be in calf when exhibited, and the premiums will be withheld till birth be certified, which must be within 9 months after the Show.

35. Animals of any age that have had a calf must be shown as Cows.

36. Mares in Sections 5 must have produced foals after 1st January 1883, and foals must be at foot, except when death can be proved. Mares in Section 6 must be in foal, and awards will be suspended till birth is certified, which must be within 11 months from the date of the Show.

37. With reference to regulations 31 and 34, birth of at least a seven months' calf must be certified; and in regard to regulation 36, birth of at least a nine months' foal.

38. Horses entered as suitable for Field are expected to be jumped in the Horse Ring, but this is not compulsory except when the animals are being judged, and then only if required by the Judges.

39. The inspection of Horses as to soundness is left entirely to the Judges, who may consult the Society's Veterinary Surgeon if they deem it expedient.

40. No protests on veterinary grounds will be received.

41. All Ewes must have reared Lambs in 1883; and Ewes in Sections 3 and 7 (Blackfaced and Cheviot) must be in milk, and have their Lambs at foot.

42. Sheep must have been clipped bare during the season, and the Judges are instructed to examine the fleeces of the Sheep selected for prizes, and to cast those on which they find any of the former fleece. Fleeces must not be artificially coloured.

43. Sows must have reared pigs in 1883, or be in pig; and Pigs must belong to the same litter, and be uncut.

44. In Poultry the Aged Birds must have been hatched previous to, and

Cockerels and Pullets in, 1883. No dubbing is allowed in the male birds of the Game Breeds.

45. The Yard will be open for Stock on Monday, 23d July, and between 6 and 10 o'clock on the morning of Tuesday, 24th, after which hour no Stock can be admitted.

46. Bulls must be secured by nose rings, with chains or ropes attached, or with strong halters and double ropes. All cattle must be tied in their stalls.

47. Servants in charge of Stock must bring their own buckets or pails, and a piece of rope to carry their forage.

48. Strong loose boxes will be provided for Stallions and Three and Two-year-old Entire Colts, in which they can remain all night, and loose boxes for Mares with foal at foot; closed-in stables for all the other horses, and covered accommodation for the whole of the other stock.

49. Straw, hay, grass, and tares will be provided free by the Society during the four days of the Show, and half allowance on Monday for any stock that may be in the Yard that day; other kinds of food will be supplied at fixed prices in the forage yard. Any Servant removing bedding from an adjoining stall will be fined in double the amount taken. Exhibitors may fetch their own cake or corn to the Yard, but not grass, tares, hay, nor straw. Coops, food, and attendance for Poultry will be found by the Society.

50. Cattle, Sheep, Swine, or Poultry cannot be removed from the Yard till 5 P.M. on Friday, 27th July, except on certificate by the Veterinary Surgeon employed by the Directors.

51. Horses may be withdrawn at 6 o'clock each evening on a deposit of £2 for each animal, which shall be forfeited if the animal is not brought back. They must return at half-past 7 o'clock the following morning, and those not in before 8 will forfeit 10s. Horse passes to be applied for at the Committee Room between 5 and 6 P.M. on Tuesday, and the deposit will be returned between 12.30 and 2.30 on Friday.

52. When the Stock is leaving the Yard, no animal is to be moved till ordered by those in charge of clearing the Yard. Those transgressing this Rule will be detained till all the other Stock is removed.

JUDGING STOCK AND POULTRY.

53. On Tuesday, 24th July, Exhibitors, and all others except Servants in charge of Stock, must leave the Yard at 10 A.M.

54. The Judges will commence their inspection at 11 A.M., when the public will be admitted. The space reserved for the Judges will be enclosed by ropes, and no encroachment will be permitted. In no case shall a Premium be awarded unless the Judges deem the animals to have sufficient merit; and where only one or two lots are presented in a section, and the Judges consider them unworthy of the premiums offered, it shall be in their power to award a lower prize, or to suggest the removal of any lot which appears to them unworthy of being placed in the Yard.

55. In addition to the Premiums, the Judges are authorised to award three Commendations in each section (except Poultry, where only two prizes are to be awarded) if the entries are numerous and the animals of sufficient merit. These Commendations to consist of—Very Highly Commended, Highly Commended, and Commended.

56. The animals in Section 8 (Ayrshire Breed) which have not calved before the Show will be judged along with Cows and Heifers in Calf, and those in Section 9 which have calved before the Show will be judged along with Cows in Milk.

57. Two Members of Committee will attend each Section of the Judges. It will be their duty to see that no obstruction is offered to them, and that the space reserved for them is not encroached on; to communicate to the

Secretary any question that may arise for the consideration of the Committee; to complete their reports; and to ticket the prize animals.

58. It shall not be competent for any Exhibitor, nor for his Factor or Land-Steward, to act as a Judge or Attending Member in any class in which he is competing; and no Exhibitor shall remain in charge of any lot, whether belonging to himself or another, while the Judges are at work in the Yard.

COLLIE DOGS.

59. Collie Dogs to be entered with the Secretary on or before 15th June. Received in the Show Yard on Monday, 23rd July, and till 10 A.M. on Tuesday, 24th July. Judged at 11 A.M. on Tuesday. Exhibited Tuesday, Wednesday, Thursday, and Friday, 24th, 25th, 26th, and 27th July.

60. Collies must each have a collar and chain. They will be fed by the Society, and may be taken out at night on deposit of £1, which will be returned at the termination of the Show.

STALL RENT.

61. The following rates shall be paid by Exhibitors when making their Entries:—

	Members.		Non-Members.	
	s.	*d.*	*s.*	*d.*
Cattle, each, ...	15	0	25	0
Loose boxes for Stallions—3 and 2 year-old entire Colts, and Mares with Foals at foot,	30	0	40	0
All other Horses, each, ...	20	0	30	0
Sheep, per pen, ...	10	0	15	0
Swine, per pen, ...	15	0	20	0
Poultry, each entry, ...	3	0	5	0
Collie Dogs, each, ...	3	0	5	0
Covered Booths for offices, 9 feet by 9 feet, .	70	0	100	0
Newspaper offices, . . £2, 10s.				

IMPLEMENTS AND OTHER ARTICLES.

62. Implements to be entered with the Secretary on or before 1st June. Received in the Yard on Tuesday, 17th July, and till 10 o'clock on the morning of Tuesday, 24th July. Exhibited Tuesday, Wednesday, Thursday, and Friday, 24th, 25th, 26th, and 27th July. The Schedule of entry must be filled up so far as within the knowledge of the Exhibitor, and prices must be stated.

63. No Money Prizes or Medals will be given for Implements of any kind, and no inspection of them by Judges will take place, except those specified at p. 15.

64. Agricultural Implements, and Implements and collections of articles not Agricultural, will be received for Exhibition, but the Secretary will be entitled to refuse Entries from dealers in articles not deemed worthy of Exhibition.

65. Implements will be placed in the following sections, viz.:—1st, Under cover; 2nd, Open; 3rd, Motion yard; 4th, for Exhibits not Implements of Husbandry, which will be placed apart from the Agricultural Implements, either under cover or open. Exhibitors must specify the space they require.

66. The articles of each Exhibitor will be all placed in one stand, except implements in motion, and must not on any account extend beyond the width allowed. No article to be moved out of its stand, or the stand dismantled, till the termination of the Show, at 5 P.M. on Friday, 27th July. Those infringing this rule will be reported to the Directors.

67. Exhibitors must arrange their own articles *within* the space allotted to

them before 11 o'clock on Tuesday the 24th July, and to the satisfaction of those in charge of the Implement Yard.

68. Exhibitors must on no account leave their stands during the judging of Stock, and if found in the Stock Yard they will be fined 10s.

69. All Machines requiring steam or fire must be entered as such in the Certificate, and will be placed in the Motion Yard. Coke must be used in all cases where fire is required.

70. No Steam Engine shall be driven in the Yard at a greater speed than 4 miles an hour.

71. Locomotive and Traction Engines and other Machines must not be moved from their places without permission of the Secretary, and must not leave their stands till 5.30 P.M. on Friday.

72. There must be attached to each Implement, when forwarded to the Show, a label bearing the Exhibitor's name, and that of the implement.

73. The carriage of all Implements must be prepaid.

STALL RENT.

74. No smaller space than 6 feet frontage, 20 feet deep (in Motion Yard 50 feet deep), can be allowed for Implements, and, except for exhibits not agricultural, no boarding shall exceed 4 feet in height.

75. Implement Exhibitors who are Members of the Society are entitled to either 20 feet by 20 feet of open space free; or in Motion Yard 8 feet by 50 feet of open space free; for additional space the charge is as follows :—

	Members.	Non-Members.
Implement Shedding, 20 feet deep 9 feet high, per foot,	£0 3 0	£0 4 0
Implements without Shedding, 20 feet deep, per foot,	0 2 0	0 3 0
Implement Shedding in Motion Yard, 20 feet deep with 30 feet open space behind, per foot,	0 4 6	0 7 0
Implements in Motion Yard, without shedding, 50 feet deep, per foot,	0 2 6	0 5 0
Covered Booths for offices, 9 feet by 9 feet, each,	3 10 0	5 0 0
Newspaper offices, each, ... £2, 10s.		

ADMISSION TO YARD.

The public will be admitted on Tuesday, 24th July, at 11 A.M., when the inspection by the Judges commences. The charges will be—Tuesday, from 11 A.M. till 5 P.M., 5s; Wednesday, from 8 A.M. till 5 P.M., 3s.; Thursday, from 8 A.M. till 5 P.M., 2s.; Friday, from 8 A.M. till 5 P.M., 1s.

Members of the Society are admitted to the Showyard without payment, on exhibiting a "*Member's Ticket*," which is strictly not transferable. Tickets will be sent to all Members residing in Great Britain whose addresses are known, and on no account will duplicates be issued. All Members not producing their tickets must pay at the gate, and the admission-money will not be returned.

Exhibitors of Stock (not Members) will be charged 5s. for admission to the judging on Tuesday; on Wednesday at 8 A.M., and throughout the Show, they will be admitted free.

Exhibitors of Implements and their attendants will be entitled to free entry during the Show, but must remain at their stalls during the judging of the Stock on Tuesday.

Tickets for attendants on Stock and Implements are not available to admit to the Yard between 11 A.M. and 5 P.M.; and any attendant requiring to leave the Yard during the day, cannot be again admitted except by a special pass (to be applied for at the Committee Room), which must be given up on his return.

Placards are prohibited both inside the Showyard and on the outside of the Boundary Fence, with the exception of those belonging to Exhibitors, whose right is confined to their own stalls. No newspapers or any other article allowed to be carried about the Yard for sale. No strolling bands admitted.

No Carriages or Equestrians admitted without special leave from the Directors, and then only for Invalids. Bath chairs may be brought in.

Premium Lists, Regulations, and Certificates of Entry, may be obtained by applying at the Secretary's Office, No. 3 George IV. Bridge, Edinburgh.

All Communications should be addressed to FLETCHER NORTON MENZIES, Esq., *Secretary of the Highland and Agricultural Society of Scotland, No. 3 George IV. Bridge, Edinburgh.*

LAST DAYS OF ENTRY.

IMPLEMENTS—1ST JUNE
STOCK AND ALL OTHER ENTRIES—15TH JUNE.

RAILWAY ARRANGEMENTS.

The Scotch Railway Companies have adopted the following regulations:—

BY PASSENGER TRAIN.

1. Live Stock *to* the Show to be charged ordinary rates.
2. Live Stock *from* the Show, *if sold*, to be charged ordinary rates.
3. Live Stock *from* the Show, *if unsold*, to be conveyed at half rates back to the station whence they were sent, on production of a certificate from the Secretary of the Agricultural Show to the effect that they are really unsold; failing production of such certificate, ordinary rates must be charged. The reduction to half-rate is to be allowed only when the animals are returned by the same route as that by which they were conveyed to the Show.

If the unsold Live Stock which was conveyed on the outward journey by Goods Train in cattle trucks be required to be returned by Passenger Train in horse-boxes, half the Passenger Train rates must be charged.

4. HORSES—By Passenger or Special Train.
    - (*a*) A Stallion to be charged the rate for one Horse, plus 50 per cent.
    - (*b*) Any other Horse, for which the exclusive use of a horse-box is *ordered*, to be charged the rate for one Horse, plus 50 per cent.
    - (*c*) Other Horses to be charged at ordinary rates.
5. BULLS, COWS, AND OTHER ANIMALS—
    - (*a*) A Bull, Cow, or other animal sent in a horse-box, and for which the exclusive use of the box *has been ordered*, to be charged the rate for three Horses.
    - (*b*) Bulls, Cows, or other animals sent in horse-boxes, but for which the exclusive use of the box *has not been ordered*, to be charged each the rate for one Horse, plus 50 per cent.
6. Unsold Live Stock transferred from one Agricultural Show to another, in another part of the country, must be charged ordinary rates.
7. POULTRY.—The Companies give notice that they are not common carriers of poultry; they will, however, to accommodate the public, carry such by special agreement only, and at special rates, to be obtained at the Companies' stations.
8. Provender conveyed to Agricultural Shows with Live Stock is to be charged ordinary rates, except so much of the same as may be required on the journey.
9. Dogs to be charged full rates both ways.
10. All the above to be carried at owners' risk.

11. Collection and delivery to be performed in all cases by the owners.

12. Men, certified by the owners to be *bona fide* in charge of Live Stock, to be conveyed free in the same train as the animals, as follows :—

One man for each consignment, except when the consignment requires more than one vehicle, when one man for each vehicle may be sent free.

NOTE.—*Upon both the outward and homeward journey a separate certificate must be given, which must be retained by the station master at the outward or homeward starting-point, as the case may be.*

13. For men in charge of Horses or other Live Stock forwarded by Passenger Train, no separate pass must be issued ; the only form of pass must be the endorsement of the station clerk written across the horse ticket, which must be delivered up on the arrival of the animals at their destination.

BY GOODS TRAIN.

Live Stock.

1. Live Stock *to* the Show to be charged ordinary rates.

2. Live Stock *from* the Show, *if sold,* to be charged ordinary rates.

3. Live Stock *from* the Show, *if unsold,* to be conveyed at half rates back to the station whence they were sent, on production of a certificate from the Secretary of the Agricultural Show to the effect that they are really unsold ; failing production of such certificate, ordinary rates must be charged. The reduction to half-rate is to be allowed only when the animals are returned by the same route as that by which they were conveyed *to* the Show.

If the unsold Live Stock which was conveyed on the outward journey by Passenger Train in horse-boxes be required to be returned by Goods Train in cattle trucks, half the Goods Train rates must be charged.

4. Live Stock rates are " station to station " only.

5. Unsold Live Stock transferred from one Agricultural Show to another, in another part of the country, must be charged ordinary rates.

6. POULTRY.—The Companies give notice that they are not common carriers of poultry. They will, however, to accommodate the public, carry such by special agreement only, and at special rates, to be obtained at the Companies' stations.

7. Horse-boxes must not be provided for the carriage of Live Stock sent by Goods Train and invoiced at Goods Train rates.

8. Provender conveyed to Agricultural Shows with Live Stock is to be charged ordinary rates, except so much of the same as may be required on the journey.

9. Men, certified by the owners to be *bona fide* in charge of Live Stock, to be conveyed free in the same train as the animals ; the number not to exceed one man to each vehicle.

NOTE.—*Upon both the outward and homeward journey a separate certificate must be given, which must be retained by the station master at the outward or homeward starting-point, as the case may be.*

10. For men in charge of Live Stock forwarded by Goods Train, no separate pass must be issued, but the form of pass must be printed on the Live Stock Ticket, which must be delivered up on the arrival of the Live Stock at their destination.

Agricultural Machines and Implements.

The aplpication of the following Regulations for the conveyance of Agricultural Implements should not be extended to articles other than implements of husbandry :—

11. Agricultural Machines and Implements *to* the Show to be charged ordinary rates.

12. Agricultural Machines and Implements *from* the Show, *if sold,* to be charged ordinary rates.

13. Agricultural Machines and Implements *from* the Show, *if unsold*, to be conveyed at half rates back to the station whence they were sent, on production of a certificate from the Secretary of the Agricultural Show to the effect that they are really unsold; failing production of such certificate, ordinary rates must be charged. The reduction to half-rate is to be allowed only when the articles are returned by the same route as that by which they were conveyed to the Show.

14. Unsold goods transferred from one Agricultural Show to another, in another part of the country, must be charged ordinary rates.

15. Agricultural Societies' Show Plant must be charged at Special Class rates, station to station.

16. All the above to be carried at owners' risk.

17. Collection and delivery to be performed in all cases by the owners.

PREMIUMS.

THE TWEEDDALE GOLD MEDAL, *value £20, will be given for the best Shorthorn Bull in the Yard. All former Prize Animals are eligible to compete.*

In addition to the Premiums, the Judges are authorised to award three Commendations in each section (except Poultry, where only two prizes are to be awarded) if the entries are numerous, and the animals of sufficient merit. These Commendations to consist of —Very Highly Commended, Highly Commended, and Commended.

CLASS I.—CATTLE.

Section	SHORTHORN.*	Premiums. 1st.	2d.	3d.	
		£	£	£	
1.	Bull calved before 1st Jan. 1881, .	20	10	5	
	Breeder of best Bull,—The Silver Medal.				
2.	Bull calved on or after 1st Jan. 1881, .	20	10	5	
3.	Bull calved on or after 1st Jan. 1882, .	10	5	3	
4.	Cow of any age, ...	15	8	4	
5.	Heifer calved on or after 1st Jan. 1881,	10	5	3	
6.	Heifer calved on or after 1st Jan. 1882,	8	4	2	
					£147
	AYRSHIRE.				
7.	Bull calved before 1st Jan. 1882, .	20	10	5	
	Breeder of best Bull,—The Silver Medal.				
8.	Cow in Milk of any age, . .	15	8	4	
9.	Cow in calf of any age, or Heifer in calf, calved before 1st Jan. 1881, . .	15	8	4	
10.	Heifer calved on or after 1st Jan. 1881,	10	5	3	
11.	Heifer calved on or after 1st Jan. 1882, .	8	4	2	
					121
	Carry forward, . . .				£268

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* The Tweeddale Gold Medal, value £20, will be given for the best Shorthorn Bull in the Yard. All former Prize Animals are eligible to compete.

Brought forward, . . . £268

Section		Premiums. 1st. £	2d. £	3d. £	
	POLLED ANGUS OR ABERDEEN.				
12.	Bull calved before 1st Dec. 1880,	20	10	5	
	Breeder of best Bull,—The Silver Medal.				
13.	Bull calved on or after 1st Dec. 1880,	20	10	5	
14.	Bull calved on or after 1st Dec. 1881,	10	5	3	
15.	Cow of any age,	15	8	4	
16.	Heifer calved on or after 1st Dec. 1880,	10	5	3	
17.	Heifer calved on or after 1st Dec. 1881,	8	4	2	147
	GALLOWAY.				
18.	Bull calved before 1st Jan. 1882,	20	10	5	
	Breeder of best Bull,—The Silver Medal.				
19.	Cow of any age,	15	8	4	
20.	Heifer calved on or after 1st Jan. 1881,	10	5	—	
21.	Heifer calved on or after 1st Jan. 1882,	8	4	—	89
	HIGHLAND.				
22.	Bull calved before 1st Jan. 1880,	20	10	5	
	Breeder of best Bull,—The Silver Medal.				
23.	Bull calved on or after 1st Jan. 1880,	20	10	5	
24.	Bull calved on or after 1st Jan. 1881,	10	5	3	
25.	Bull calved on or after 1st Jan. 1882,	5	3	1	
26.	Cow of any age,	15	8	4	
27.	Heifer calved on or after 1st Jan. 1880,	10	5	3	
28.	Heifer calved on or after 1st Jan. 1881,	8	4	2	
29.	Heifer calved on or after 1st Jan. 1882,	5	3	1	
30.	Family Prize.—Cow of any age, and three or more of her descendants, male or female,	15	8	4	192
	FAT STOCK.				
31.	Highland Ox calved before 1st Jan. 1880,	5	3	—	
32.	Highland Ox calved on or after 1st Jan. 1880,	4	2	—	
33.	Shorthorn Ox calved before 1st Jan. 1881,	5	3	—	
34.	Shorthorn Ox calved on or after 1st Jan. 1881,	4	2	—	
35.	Polled Ox calved before 1st Jan. 1881,	5	3	—	
36.	Polled Ox calved on or after 1st Jan. 1881,	4	2	—	
37.	Ox of any other Pure or Cross Breed calved before 1st Jan. 1881,	5	3	—	
38.	Ditto, calved on or after 1st Jan. 1881,	4	2	—	
39.	Cross-bred Heifer calved before 1st Jan. 1881,	5	3	—	
40.	Cross-bred Heifer calved on or after 1st Jan. 1881,	4	2	—	70
					£766

CLASS II.—HORSES.

Section		Premiums. 1st. £	2d. £	3d. £	
	FOR AGRICULTURAL PURPOSES.				
1.	Stallion foaled before 1st Jan. 1880,	25	18	10	
	Breeder of best Stallion,—The Silver Medal.				
2.	Entire Colt foaled on or after 1st Jan. 1880,	20	15	8	
3.	Entire Colt foaled on or after 1st Jan. 1881,	15	8	4	
4.	Entire Colt foaled on or after 1st Jan. 1882,	10	5	3	
5.	Mare (with Foal at foot) foaled before 1st Jan. 1880,	20	10	5	
6.	Mare (in Foal) foaled before 1st Jan. 1880,	20	10	5	
7.	Filly foaled on or after 1st Jan. 1880,	10	5	3	
8.	Filly foaled on or after 1st Jan. 1881,	8	4	2	
9.	Filly foaled on or after 1st Jan. 1882,	6	3	1	
10.	Draught Gelding foaled before 1st Jan. 1880,	5	3	1	
11.	Draught Gelding foaled on or after 1st Jan. 1880,	5	3	1	
					£271
	ROADSTERS.				
12.	Mare or Gelding, suitable for carriage, foaled before 1st Jan. 1880,	15	8	—	
13.	Mare or Gelding, suitable for carriage, foaled on or after 1st Jan. 1880,	15	8	—	
14.	Mare or Gelding, suitable as Hackney or Roadster, between 14 and 15 hands,	10	5	—	
					61
	PONIES.				
15.	Highland Stallion, 15 hands and under,	10	5	3	
16.	Highland Mare or Gelding, between 13 and 14½ hands,	6	3	1	
17.	Mare or Gelding, between 12½ and 14 hands,	6	3	1	
18	Mare or Gelding, under 12½ hands,	6	3	1	
					48
	STALLIONS FOR AGRICULTURAL PURPOSES.				
	Stallion for Agricultural purposes to serve in the District of the Show in season 1883; Competition to take place in spring,				100
					£480

CLASS III.—SHEEP.

Section		Premiums. 1st. £	2d. £	3d. £	
	BLACKFACED.				
1.	Tup above one shear,	10	6	3	
2.	Shearling Tup,	10	6	3	
3.	Three Ewes above one shear,	8	5	2	
4.	Three Shearling Ewes or Gimmers,	8	5	2	
					£68
	CHEVIOT.				
5.	Tup above one shear,	10	6	3	
6.	Shearling Tup,	10	6	3	
7.	Three Ewes above one shear,	8	5	2	
8.	Three Shearling Ewes or Gimmers,	8	5	2	
					68
	BORDER LEICESTER.				
9.	Tup above one shear,	10	6	3	
10.	Shearling Tup,	10	6	3	
11.	Three Ewes above one shear,	8	5	2	
12.	Three Shearling Ewes or Gimmers,	8	5	2	
					68
	LONG-WOOLLED OTHER THAN BORDER LEICESTER.				
13.	Tup above one shear,	3	2	—	
14.	Shearling Tup,	3	2	—	
15.	Three Ewes above one shear,	3	2	—	
16.	Three Shearling Ewes or Gimmers,	3	2	—	
					20
	SHROPSHIRE.				
17.	Tup above one shear,	8	4	2	
18.	Shearling Tup,	8	4	2	
19.	Three Ewes above one shear,	6	3	1	
20.	Three Shearling Ewes or Gimmers,	6	3	1	
					48
	SHORT WOOLLED OTHER THAN SHROPSHIRE.				
21.	Tup above one shear,	3	2	—	
22.	Shearling Tup,	3	2	—	
23.	Three Ewes above one shear,	3	2	—	
24.	Three Shearling Ewes or Gimmers,	3	2	—	
					20
	Carry forward,				£292

Brought forward, . . . £292

Section	EXTRA SECTIONS.	Premiums. 1st. £	2d. £	3d. £	
25.	Five Blackfaced Wethers, not above 4 shear,	3	2	—	
26.	Five Cheviot Wethers, not above 3 shear,	3	2	—	
27.	Five Half-bred* Wethers, not above 2 shear,	3	2	—	
28.	Five Cross-bred† Wethers, not above 2 shear,	3	2	—	
					20
					£312

CLASS IV.—SWINE.

	BLACK OR BERKSHIRE.	Premiums. 1st. £	2d. £	3d. £	
1.	Boar, ...	5	3	1	
2.	Sow, ...	4	2	1	
3.	Three Pigs, not above 8 months old, .	4	2	1	
					23
	SMALL BREED.				
4.	Boar, ...	5	3	1	
5.	Sow, ...	4	2	1	
6.	Three Pigs, not above 8 months old, .	4	2	1	
					23
					£46

CLASS V.—COLLIE DOGS.

		Premiums. 1st.	2d.	
1.	Long haired Dog, not above 6 years old, .	2	1	
2.	Long haired Bitch, not above 6 years old, .	2	1	
3.	Short haired Dog, not above 6 years old, .	2	1	
4.	Short haired Bitch, not above 6 years old, .	2	1	
				£12

EXTRA STOCK.

Animals not included in the Sections for Competition may be exhibited as Extra Stock, and will receive Honorary Premiums when specially commended, as follows :—

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* Half-breds must be the progeny of any kind of Long-Woolled or Short-Woolled Tup (except Blackfaced) with Cheviot Ewes.

† Cross-breds must be the offspring of any Whitefaced or Short-Woolled Tup with Blackfaced Ewes, or the progeny of Blackfaced Tups with Whitefaced or Short-Woolled Ewes.

CATTLE AND HORSES.

Very highly commended,	Medium Gold Medal.
Highly commended,	Minor Gold Medal.
Commended,	The Silver Medal.

SHEEP AND SWINE.

Very highly commended,	Minor Gold Medal.
Highly commended,	The Silver Medal.
Commended,	Medium Silver Medal.

CLASS VI.—POULTRY.

First Premium—One Sovereign; Second Premium—Ten Shillings—in all the Sections of Poultry.

Aged Birds must have been hatched previous to, and Cockerels and Pullets in, 1883.

	Section		Section	
Dorking—*Silver Grey*,	1.	Cock.	2.	Hen.
	3.	Cockerel.	4.	Pullet.
Dorking—*Coloured*,	5.	Cock.	6.	Hen.
	7.	Cockerel.	8.	Pullet.
Cochin-China,	9.	Cock.	10.	Hen.
	11.	Cockerel.	12.	Pullet.
Brahmapootra,	13.	Cock.	14.	Hen.
	15.	Cockerel.	16.	Pullet.
Spanish,	17.	Cock.	18.	Hen.
	19.	Cockerel.	20.	Pullet.
Scotch Grey,	21.	Cock.	22.	Hen.
	23.	Cockerel.	24.	Pullet.
Hamburg,	25.	Cock.	26.	Hen.
	27.	Cockerel.	28.	Pullet.
Any other Pure Breed,	29.	Cock.	30.	Hen.
	31.	Cockerel.	32.	Pullet.
Game—*Black or Brown Reds*,	33.	Cock.	34.	Hen.
	35.	Cockerel.	36.	Pullet.
Game — *Any other Pure Breed*,	37.	Cock.	38.	Hen.
	39.	Cockerel.	40.	Pullet.
Bantams — *Any Pure Breed*,	41.	Cock.	42.	Hen.
	43.	Cockerel.	44.	Pullet.
Ducks—*White Aylesbury*,	45.	Drake.	46.	Duck.
	47.	Drake (Young).	48.	Duckling.
Ducks —*Rouen*,	49.	Drake.	50.	Duck.
	51.	Drake (Young).	52.	Duckling.
Ducks—*Any other Pure Breed*,	53.	Drake.	54.	Duck.
	55.	Drake (Young).	56.	Duckling.
Turkeys — *Any Pure Breed*,	57.	Cock.	58.	Hen.
	59.	Cock (Poult).	60.	Hen (Poult).
Geese—*Any Pure Breed*,	61.	Gander.	62.	Goose.
	63.	Gander (Young).	64.	Gosling.

Amount of Poultry Premiums, £96.

CLASS VII.—IMPLEMENTS.

The following Implements, being yet in a comparatively undeveloped state, will be dealt with as new inventions, and Premiums will be offered, as follows:—

	Premiums.		
	1st.	2d.	3d.
Section	£	£	£
1. Turnip Thinners, ...	15	10	5
2. Potato Planters, ...	15	10	5
3. Weed Eradicators, for use among growing corn in tearing up weeds or pulling off the flower of weeds in growing crops, .	15	10	5

£90

REGULATIONS FOR COMPETITIVE TRIALS.

1. Implements to be entered with the Secretary on or before 1st June Received in the Yard on Tuesday, 17th July, and till 10 o'clock on the morning of Tuesday, 24th July. Exhibited Tuesday, Wednesday, Thursday, and Friday, 24th, 25th, 26th, and 27th July.

2. The Society will provide ground near Inverness at a suitable season in 1884, and make arrangements for the proper trial of the Implements.

3. The price as entered in the Catalogue must be held the same till after the trials are over.

4. Implements must be *bona fide* the manufacture of the exhibitor, and fitted together by him, but portions of the machine or other article exhibited for competition may be purchased from other works.

5. The Premiums will not be awarded without thorough and exhaustive open and competitive trials.

6. The Committee shall have power to withhold the Prizes where there is not sufficient merit, or to apportion them as they think best.

REGULATIONS FOR EXHIBITION OF IMPLEMENTS AT WORK.

1. At the time of the competitive trials the Society will provide ground suitable for the exhibition at work of Ploughs, Grubbers, Diggers, and Cultivators.

2. The Implements must be entered and exhibited as specified in Rule 1 for the Competitive Trials.

3. Exhibitors must, when making their entries, specify on the Entry Schedule the quantity of ground required at the time of the trials, which will be in 1884.

4. Exhibitors must bind themselves at the time of entry to pay their proportion of the land required at such rate as the Committee may determine, whether they bring their Implements forward or not.

Reference is made to the General Regulations for the terms on which other Implements and Machines may be exhibited at the Show.

CLASS VIII.—HIGHLAND INDUSTRIES AND FISHERIES.

Section	Premiums. 1st. £	2d. £	
1. Best Keg of Eels from Scotch loch or stream, to be supplied in quantity at the price quoted, and best and simplest engine of capture, . . .	5	—	
2. Best Keg of true Smelts (*Osmerus*), or Sand Smelts (*Atherina*), and Sillocks, caught north of the Forth and Clyde, ...	5	—	
3. Finest show of Mussels. Exhibitor to supply, if required, not less than 100 tons, at a price on East Coast, ...	5	2	
4. Best Barrel of White Herring, ...	5	—	
5. Best Collection of Dried and Smoked Fish, .	8	4	
6. Best Guard-Rail for Fishing Boats, ...	8	—	
7. Best Collection of Apparatus, not a Trawl, for the capture of Sea-fish, not including Salmon,	8	—	
			£50

CLASS IX.—BEE HUSBANDRY.

£20 and 2 Silver Medals have been granted to the Caledonian Apiarian and Entomological Society. Information to be obtained from, and Entries made with, Mr. R. J. Bennett, 50 Gordon Street, Glasgow.

ABSTRACT OF PREMIUMS.

		£	s.	d.
1.	Cattle, ...	£766	0	0
2.	Horses, ...	480	0	0
3.	Sheep, ...	312	0	0
4.	Swine, ...	46	0	0
5.	Collie Dogs, ...	12	0	0
6.	Poultry, ...	96	0	0
7.	Implements, ...	90	0	0
8.	Highland Industries and Fisheries, .	50	0	0
9.	Bee Husbandry, ...	21	12	0
10.	Tweeddale Gold Medal, . . .	20	0	0
11.	Six Silver Medals to Breeders of best Aged Bulls and best Stallion, .	4	16	0
12.	Extra Stock, say	80	0	0
		£1978	8	0

HIGHLAND AND AGRICULTURAL SOCIETY.

GENERAL SHOW OF STOCK AND IMPLEMENTS

At EDINBURGH, 1884,

THE CENTENARY OF THE SOCIETY.

The District connected with the Show comprises the Counties of Edinburgh, Haddington, and Linlithgow.

The Directors are willing to accept on this occasion suitable Champion Cups or Prizes for the recognised Breeds of Cattle, Horses, and Sheep, for which all former Prize Animals will be eligible to compete.

Premiums will be offered for the following Classes :—

CATTLE.

SHORTHORN.

Bull calved before 1st January 1882
Bull calved on or after 1st January 1882
Bull calved on or after 1st January..................................... 1883
Cow of any age.
Heifer calved on or after 1st January 1882
Heifer calved on or after 1st January 1883
Family or Group Prize.*

AYRSHIRE.

Bull calved before 1st January 1882
Bull calved on or after 1st January 1882
Bull calved on or after 1st January 1883
Cow in milk of any age.
Cow in calf of any age, or Heifer in calf calved before 1st January 1882
Heifer calved on or after 1st January 1882
Heifer calved on or after 1st January 1883
Family or Group Prize.*

POLLED ANGUS OR ABERDEEN.

Bull calved before 1st December 1881
Bull calved on or after 1st December 1881
Bull calved on or after 1st December 1882
Cow of any age.
Heifer calved on or after 1st December 1881
Heifer calved on or after 1st December 1882
Family or Group Prize.*

GALLOWAY.

Bull calved before 1st January	1882
Bull calved on or after 1st January	1882
Bull calved on or after 1st January	1883
Cow of any age.	
Heifer calved on or after 1st January	1882
Heifer calved on or after 1st January	1883
Family or Group Prize.*	

HIGHLAND.

Bull calved before 1st January	1881
Bull calved on or after 1st January	1881
Bull calved on or after 1st January	1882
Cow of any age.	
Heifer calved on or after 1st January	1881
Heifer calved on or after 1st January	1882
Family or Group Prize.*	

HORSES

For Agricultural Purposes.

Stallion foaled before 1st January	1881
Entire Colt foaled on or after 1st January	1881
Entire Colt foaled on or after 1st January	1882
Entire Colt foaled on or after 1st January	1883
Mare with foal at foot, foaled before 1st January	1881
Mare in foal, foaled before 1st January	1881
Filly foaled on or after 1st January	1881
Filly foaled on or after 1st January	1882
Filly foaled on or after 1st January	1883
Family or Group Prize.*	

DRAUGHT GELDINGS.

Draught Gelding foaled before 1st January	1881
Draught Gelding foaled on or after 1st January	1881

ROADSTERS.

Brood Mare, with foal at foot, suitable for field.
Yeld Mare or Gelding, suitable for field, heavy weight, 4 years and upwards.
Yeld Mare or Gelding, suitable for field, light weight, 4 years and upwards.
Mare or Gelding, suitable for carriage, foaled before 1st January 1880.
Mare or Gelding, suitable as Hackney or Roadster, between 14 and 15 hands.
Stallion, Mare, or Gelding, for leaping.

PONIES.

Highland Stallion, 15 hands and under.
Highland Mare or Gelding, between 13 and 14½ hands.
Mare or Gelding, between 12½ and 14 hands.
Mare or Gelding, under 12½ hands.

SHEEP.

Ewes and Gimmers to be exhibited in pens of three.

BLACKFACED.

Tup above one shear.
Shearling Tup.
Ewes above one shear.
Shearling Ewes or Gimmers.
Family or Group Prize.*

CHEVIOT.

Tup above one shear.
Shearling Tup.
Ewes above one shear.
Shearling Ewes or Gimmers.
Family or Group Prize.*

BORDER LEICESTER.†

Tup above one shear.
Shearling Tup.
Ewes above one shear.
Shearling Ewes or Gimmers.
Family or Group Prize.*

LONG-WOOLLED OTHER THAN BORDER LEICESTER

Tup above one shear.
Shearling Tup.
Ewes above one shear.
Shearling Ewes or Gimmers.

SHROPSHIRE.

Tup above one shear.
Shearling Tup.
Ewes above one shear.
Shearling Ewes or Gimmers.

SHORT-WOOLLED OTHER THAN SHROPSHIRE.

Tup above one shear.
Shearling Tup.
Ewes above one shear.
Shearling Ewes or Gimmers.

Sheep not included in the above Classes must be entered as Extra Stock.

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* The animals to form the Family or Group Prizes will be announced in January.

† The Tweeddale Gold Medal, value £20, will be given for the best Border Leicester Tup in the Yard. All former Prize Animals will be eligible to compete.

SWINE.

Pigs to be exhibited in pens of three.

LARGE BREED.	BLACK OR BERKSHIRE.
Boar.	Boar.
Sow.	Sow.
Pigs not above 8 months old.	Pigs not above 8 months old.

SMALL BREED.

Boar.
Sow.
Pigs not above 8 months old.

POULTRY.

To be shown in Pens of One Cock or Cockerel and One Hen or Pullet of each of the following breeds :—

Dorking—Silver-Grey.
Dorking—coloured.
Cochin-China.
Bramahpootra.
Spanish.
Scotch Grey.
Hamburg.
Any other pure Breed.
Game—Black or Brown Reds.
Game—Any other pure Breed.
Bantams—Any pure Breed.
Ducks—White Aylesbury.
Ducks—Rouen.
Ducks—Any other pure Breed.
Turkeys—Any pure Breed.
Geese—Any pure Breed.

IMPLEMENTS.

Special Premiums will be offered for the following machines :—

1. Exhaust Fan for Agricultural purposes, to be worked by hand, horse, or steam power.
2. Broadcast Manure Distributor, suitable for all kinds of artificial manures.
3. A Machine at a price within the ordinary farmer's means of acquisition adapted for cleaning all sorts of grain and other seeds from weeds.
4. Cream and Milk Separator.
5. Machine for working Butter.
6. Travelling Steam Engine, suitable for drawing Reaper, Binder, and for other farm work.

HIGHLAND INDUSTRIES AND FISHERIES.

Prizes will be given for Cured Fish and Fish Products, of which due intimation will be given.

BEE HUSBANDRY.

Two Silver Medals will be granted to the Caledonian Apiarian and Entomological Society.

APPENDIX (C).

LIST OF MEMBERS

OF

THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND,

1883,

ALPHABETICALLY ARRANGED, AND STATING THE
YEAR OF ADMISSION.

By the Charter of 1834 the Society consists of two classes, Ordinary and Honorary or Corresponding Members. The number of Honorary or Corresponding Members resident in the United Kingdom must not exceed twenty, but with power to the Society to elect as Honorary Associates persons resident abroad, not subjects of Her Majesty, who may have been benefactors to the Society, or who are distinguished for their skill in Art or Science, provided that the number of such Foreign Associates shall not exceed twenty.

By a Bye-Law passed in 1873, with reference to the Supplementary Charter of 1856, successful Candidates for the Society's Agricultural Diploma are thereby eligible to be elected free Life Members of the Society.

Candidates for Ordinary Membership must be proposed by a Member, and are elected at the half-yearly General Meetings in January and June. It is not necessary that the Member who proposes the Candidate should attend the meeting.

The ordinary subscription is £1, 3s. 6d. annually, which may be redeemed by one payment, varying according to the number of previous annual payments, from £12, 12s. to £7, 1s. Proprietors farming the whole of their own lands, whose Assessment on the Valuation Roll does not exceed £500 per annum, and all Tenant-Farmers, Office-Bearers of Local Agricultural Associations, Resident Agricultural Factors, Land Stewards, Foresters, Agricultural Implement Makers, and Veterinary Surgeons, none of them being also owners of land to an extent exceeding £500 per annum, are admitted on a subscription of 10s. annually, which may be redeemed by one payment, varying according to the number of previous annual payments, from £5, 5s. to £3. Subscription payable on election, and afterwards annually in January.

According to the Charter, a Member who homologates his Election by paying his first subscription cannot retire until he has paid, in annual subscriptions, or otherwise, an amount equivalent to a life composition.

Members of the Society receive the *Transactions* on application, and are entitled to apply for District Premiums—to report Ploughing Matches for the Medal—to free admission to the Show-Yard, and to exhibit Stock and Implements at reduced rates. Firms are not admitted as Members, but if one partner of a firm becomes a Member, the firm is allowed to exhibit at Members' rates.

Members having Candidates to propose are requested to send their names to Fletcher Norton Menzies, Esq., No. 3 George IV. Bridge, Edinburgh.

The Members marked * have been Presidents; and † Vice-Presidents.

LIST OF MEMBERS.

Admitted

Her Most Gracious Majesty THE QUEEN. 1872

*His Royal Highness The PRINCE OF WALES. 1873

Admitted

1880 Aalvik, E. A. Ostenso, Hardanger, Norway

1833 ABERCORN, His Grace the Duke of, K.G., London

1862 ABERCROMBY, Right Hon. Lord, Airthrey Castle, Stirling

1873 ABERCROMBY, Sir Robert John, of Birkenbog, Bart., Forglen, Turriff

1868†ABERDEEN, Right Hon. the Earl of, Haddo House, Methlick

1865 ABINGER, Right Hon. Lord, Inverlochy Castle, Kingussie

1878 Ackers, Benjamin St John, Prinknash Park, Painswick

1855 Adam, Æneas, Humbertson, Dingwall

1882 Adam, Sir Charles Elphinstone, of Blair Adam, Bart.

1860 Adam, John, Closeburn Castle, Thornhill

1878 Adam, Robert, City Chamberlain, Edinburgh

1856 Adam, Stephen, Wool Merchant, 11 Hillside Crescent, Edinburgh

1876 Adam, Thomas, National Bank, Aberdeen

1874 Adam, Thomas, of Lynegar, Bank Agent, Wick

1876 Adam, William, Bush, Banchory-Ternan

1881 Adams, James, M.D., Oathlaw, Forfar

1872 Adamson, Henry D., Great Cliff House, Dawlish

1874 Addie, Gavin, Western Club, Glasgow

1875 Addie, John, Viewpark, Uddingston

1850 AGNEW, Sir Andrew, of Lochnaw, Bart., Stranraer

1878 Agnew, James, High Portencallie, Stranraer

1843 Agnew, R. Vans, of Sheuchan and Barnbarroch, Wigtown

1875 Agnew, William, Balwherrie, Stranraer

1857 Aikman, Thomson, Glasgow

1882 Aikman, Thomson, jun., 5 Prince's Square, Glasgow

1882 AILSA, Most Noble the Marquis of, Culzean Castle, Maybole

1876 Ainslie, Ainslie Douglas, of Delgaty Castle, Turriff

1864 Ainslie, Daniel (of the Gart, Callander), 48 Moray Place, Edinburgh

1859 Ainslie, David, of Costerton, Blackshiels

1848 Ainslie, John, Fairfield, Loanhead

1882 Ainslie, John, jun., Hillend, Lothian Burn

Admitted

1853 Ainslie, R., of Elvingston, Gladsmuir

1875 Ainslie, William, Pitfour, Mintlaw

1882 AIRLIE, Right Hon. the Earl of, Cortachy Castle, Kirriemuir

1874 Aitchison, James, 80 Princes Street, Edinburgh

1851 Aitchison, James (late Proncy Mains, Dornoch), Australia

1865 Aitchison, Lieut.-Col., of Drummore, Musselburgh

1870 Aitchison, Peter (late West Garleton, Haddington), America

1863 Aitchison, William, Linhope, Hawick

1877 Aitken, Dr A. P., St Anns, Morningside Drive, Edinburgh — *Chemist to the Society*

1861 Aitken, George, Tyrie, Kirkcaldy

1883 Aitken, George Lewis, Boglilly, Kirkcaldy

1854 Aitken, James, Westfield, Eskbank, Dalkeith

1877 Aitken, John, sen., V.S., Causewayside, Edinburgh

1864 Aitken, John Gillespie, Southfield, Stirling

1879 Aitken, John M., 24 St Andrew Square, Edinburgh—*Free Life Member*

1878 Aitken, Mark, Traprain, Prestonkirk

1857 Aitken, Robert, Drumore, Campbeltown

1869 Aitken, Robert, late Kilmany, Cupar Fife

1860 Aitken, Thomas, 5 Grosvenor Crescent, Edinburgh

1854 Aitken, Thomas, Listonshiels, Balerno

1875 Aitkenhead, Alex., Shawmoss, Pollokshaws

1878 Aitkenhead, William, Roughlands, Larbert

1882 Aiton, John, Milnwood Iron Works, Holytown

1882 Alexander, A. S., Dysart, Tama Co., Iowa—*Free Life Member.*

1870 Alexander, Arch., Merchant, West Linton

1872 Alexander, George, Easter Lilliesleaf, St Boswells

1876 Alexander, George, South Balnoon, Huntly

1831 ALEXANDER, General Sir J. Edward, C.B., of Westerton, Bridge of Allan

1870 Alexander, James, of Balmule, Dunfermline

Admitted
1875 Alexander, James, 60 North Street, Glasgow
1855 Alexander, John, Broughty Ferry
1881 Alexander, John, Ballindarg, Kirriemuir
1861 Alexander, Thomas, Corn Factor, Perth
1858 Alexander, William, Bent of Haulkerton, Laurencekirk
1865 Alison, James M., General Merchant, Beauly
1833 Allan, Alexander, Advocate, 5 Hillside Crescent, Edinburgh
1881 Allan, Alexander, of Aros, Tobermory
1861 Allan, Alexander, Kinnon Park, Methven, Perth
1864 Allan, Alexander, Carbarns, Wishaw
1867 Allan, Andrew, Munnoch, Dalry, Ayr
1874 Allan, James, Corn Merchant, Borrowstounness
1875 Allan, James, jun., Borrowstounness
1851 Allan, James, Clifton, Mid-Calder
1855 Allan, James, Clauchlands, Lamlash
1870 Allan, James, jun., Balnacoole, Brodick
1877 Allan, James, Kirklands, Dolphinton
1854 Allan, John, Billie Mains, Ayton
1861 Allan, John, Crieffvechter, Crieff
1873 Allan, John, Redheugh, Cocksburnpath
1878 Allan, John, Culthill, Dunkeld
1875 Allan, Robert, Glenmore, Kilmelford, Lochgilphead
1868 Allan, Robert A., Eyemouth
1852 Allan, T. W. Murray, of Glenfeochan, Oban
1883 Allan, William, 24 St Andrew Square, Edinburgh
1874 Allan, William, Clury, Grantown
1870 Allan, William, Drummondreoch, Ferintosh
1871 Allan, William, Park, Clackmannan
1873 Alston, David, Hyndford Wells, West Linton
1864 Alston, George, of Craighead, Bothwell
1882 Alston, George, Loudoun Hill, Darvel
1850 Alston, John P., of Muirburn, Strathaven
1881 Amour, John, Farmer and Dairyman, Cramond Bridge
1877 Anderson, Colonel, of Bourhouse, Dunbar
1838 ANDERSON, Sir Alexander, Aberdeen
1874 Anderson, Alexander, Berryhill, Dundee
1883 Anderson, Alexander, Kippenross, Dunblane
1879 Anderson, Archibald Turnbull (Dickson & Turnbull), Perth
1873 Anderson, Arthur, M.D., C.B., Sunnybrae, Pitlochry
1866 Anderson, B. T. G., of Tushielaw, Selkirk
1877 Anderson, Charles, jun., *North British Agriculturist*, 377 High Street, Edinburgh
1878 Anderson, Charles, Barsalloch, Port William
1875 Anderson, Charles, Fettykil, Leslie
1877 Anderson, David, Cassendilly, Cupar Fife
1872 Anderson, Findlay, of Inchyra Grange, Polmont
1882 Anderson, George, Advocate, Aberdeen
1862 Anderson, George, of Woodhouse, Ecclefechan
1868 Anderson, George, of Hawthorn Bank, Selkirk
1859 Anderson, George B., Meikle Pinkerton, Dunbar
1861 Anderson, Henry, Burnside, Stanley
1873 Anderson, James, Bradbury, Enville, Stourbridge

Admitted
1863 Anderson, James, Gowanbank, Hill Street, Broughty-Ferry
1865 Anderson, James, Solicitor, Inverness
1879 Anderson, James, Inverchagganie, Crianlarich, Stirling
1873 Anderson, John, Chapel, Moffat
1857 Anderson, John, Craigton, Banchory
1868 Anderson, John, Mill of Wester Coull, Tarland
1857 Anderson, John, 14 Dean Terrace, Edinburgh
1859 Anderson, John, Dullatur, Cumbernauld
1873 Anderson, John, Strachurmore, Inveraray
1879 Anderson, John, Royal Hotel, Blairgowrie
1871 Anderson, John A., St Albans, Perth
1876 Anderson, John M., Huntly
1870 Anderson, John S. (of Whiteside, Dumfries), Dalhousie Mains, Dalkeith
1864 Anderson, Peter, Backfey, Sorbie
1878 Anderson, Peter, Duneaves, Fortingal
1870 Anderson, Robert, Alleyford, Kirkgunzeon, Dumfries
1856 Anderson, Robert, of Lochdhu, Nairn
1871 Anderson, Robert, Middlebank, Errol
1878 Anderson, Robert, Drumnakyle, Foss, Pitlochry
1881 Anderson, Robert, Stirling
1881 Anderson, Robert, Daugh, Tarland
1861 Anderson, Robert H., Lime House, Lynn Regis
1850 Anderson, Robert Hood, Devonshire Club, London
1876 Anderson, R. Lang, Bor Pukhurie Tea Estate, Biswanath, Assam, India—*Free Life Member*
1858 Anderson, Robt. Wm., Clerk of Supply, Forfar
1832 Anderson, Thomas, of Glendrisaig, Lainshaw House, Stewarton
1878 Anderson, Thomas B, Solicitor, Dumfries
1854 Anderson, T. Scott, W.S., 10 Norfolk Crescent, Hyde Park, London, W.
1865 Anderson, W., Ballimore, Tigh-na-bruiach
1877 Anderson, William, Barneil, Kirkmichael, Maybole
1857 Anderson, Wm., Hattonburn, Banchory
1867 Anderson, W. H., Clifton Villa, Anstruther
1870 Anderson, William, 10, Thirlestane Road, Edinburgh
1876 Anderson, William, Wardes, Kintore
1876 Anderson, William, Wellhouse, Alford
1881 Anderson, William Malcolm, Pirntaton, Stow
1873 Anderson, William W., Norton Mains, Ratho
1881 Andrew, Hugh, Lennoxlove, Acredales, Haddington
1873 Andrew, Robert, Allans, Inchinnan, Paisley
1870 Andrew, Wm. J., Banker, Coatbridge
1878 Andrews, John, Melville, Ladybank
1863 Angus, John, Whitefield, Morpeth
1871 Annan, David, The Torr, Moonzie, Cupar Fife
1872 ANSTRUTHER, Sir W. C. J. C., of Anstruther, Bart., Carmichael House, Thankerton
1862 ANSTRUTHER, Sir Robert, of Balcaskie, Bart., Pittenweem
1858 Anton, James, Seafield, Forres
1833 ARBUTHNOTT, Right Hon. Viscount, Arbuthnott House, Fordoun
1864 ARBUTHNOTT, Hon. Mrs, Inchmartine

Admitted
1873 ARBUTHNOTT, Hon. The Master of, Arbuthnott House, Fordoun
1855 Archbald, Thomas, of Viewbank, Lasswade
1864 Archer, Thomas, Agent-General for Queensland, 1 Westminster Chambers, Victoria Street, London
1881 Archibald, Francis, Blackfaulds, Alloa
1876 Archibald, T. B., Nisbetfield, Ladybank
1861 Archibald, James, Jamestown House, Monasterevan, Co. Kildare, Ireland
1869 Archibald, James, Overshiels, Fountainhall, Stow
1869 Archibald, John, Overshiels, Fountainhall, Stow
1882 Argo, James, Cairdseat, Udny, Aberdeen
1844*ARGYLL, His Grace the Duke of, K.T., Inveraray Castle, Inveraray
1853 Arklay, John, The Palace Lodge, Linlithgow
1861 Arklay, Robert, of Eathiebeaton, Dundee
1850 Arklay, R. H , Dun House, Montrose
1879 Armour, John, Niddry Mains, Winchburgh
1862 Arnot, David, Friarton, Newport, Fife
1871 Arnot, William, Glamis Mains, Glamis
1862 Arras, Walter, Fodderty, Dingwall
1865 Arres, William, Huntly Hall, Nairn
1858 Arundell, W. F. H., of Barjarg, Auldgirth, Dumfries
1873 Ashdown, A. H., Uppington, Salop—*Free Life Member*
1845 Askew, Henry William, late Conishead Priory, Ulverston
*1863 Askew, W., of Pallinsburn, Coldstream
1860†ATHOLE, His Grace the Duke of, K.T., Blair Castle, Blair Athole
1841 ATHOLE, Her Grace the Duchess Dowager of, Dunkeld
1877 Auld, Peter, Buteland, Balerno
1881 Auld, R. C., 247 Union Street, Aberdeen
1878 Austin, James C , The Gill, Cummertrees, Annan
1551 Austin, R. S., late Middleton, Muthill
1880 Austin, Wm., Bank Agent, Thornhill
1873 AVELAND, Right Hon. Lord, Normanton Park, Oakham, Rutlandshire
1875 Aveling, Thomas, Rochester, Kent
1844 Aytoun, Roger S., of Inchdairnie, Kirkcaldy

1824 Baillie, Evan, of Dochfour, Inverness
1839 BAILLIE, Right Hon. Henry James, of Redcastle, Killearnan, Inverness
1883 Baillie, James Evan Bruce, yr. of Dochfour, Inverness
1865 Baillie, J. M., of Culter Allers, Biggar
1869 Baillie, John, Fullerton, Penicuik
1865 Baillie, John B., of Leys, Inverness
1882 Baillie, Robert, 70 Armadale Street, Glasgow
1847 BAILLIE, Sir William, of Polkemmet, Bart., Whitburn
1877 Bain, Alex., Factor, Coltness, Wishaw
1875 BAIN, Sir James, 3 Park Terrace, Glasgow
1864 Bain, James, Bank of Scotland, Glasgow
1875 Bain, Sam. F., Inch of Leckie, Gargunnoch
1877 Bain, W. P. C., Lochrin Iron Works, Edinburgh
1881 Baird, Alexander, of Urie, Stonehaven
1878 Baird, Archibald, 67 Robertson Street, Glasgow
1868 Baird, Arthur E., Chateau de Terlingthun, par Wincelle, pas de Calais
1876 Baird, Colin C., V.S., Veterinary College, Clyde Street, Edinburgh
1860 BAIRD, Sir David, of Newbyth, Bart., Prestonkirk
1877 Baird, Henry, Abbot's Grange, Falkirk
1875 Baird, Hugh, jun., 17 Westbourne Gardens, Glasgow
1843 BAIRD, Sir James Gardiner, of Saughton Hall, Bart., Inch House, Liberton
1870 Baird John, Hall, Kirconnel, Sanquhar
1870 Baird, John, Solicitor, Lockerbie
1871 Baird, John, jun., Solicitor, Lockerbie
1880 Baird, John, of Knoydart, Inverie House, Isle Ornsay, Skye
1877 Baird, John W., 26 South Back of Canongate, Edinburgh
1873 Baird, Thomas, Courance, Lockerbie
1873 Baird, William, of Elie, Fife
1873 BALFOUR of Burleigh, Right Hon. Lord, Kennet House, Clackmannan
1863 Balfour, Arthur J., of Whittinghame, M.P., Prestonkirk
1843 Balfour, Colonel David, of Balfour and Trenabie, Kirkwall
1881 Balfour, Douglas, Letham, Leven
1857 Balfour, Major Francis W., of Fernie Castle, Cupar Fife
1879 Balfour, Professor Isaac Bayley, The University, Glasgow
1839 Balfour, John, of Balbirnie, Markinch
1839 Balfour, Prof. John Hutton, M.D., Inverleith House, Edinburgh
1880 Balfour, J. H., 7 Glencairn Crescent, Edinburgh
1869 Balfour, John M., of Pilrig, W.S., Edinburgh
1860 Ballantyne, John, Salisbury View, Windermere
1870 Ballingal, And. H., W.S., Perth
1881 Ballingal, J. Smith Ronaldson, Ellabus, Islay, Greenock
1871 Ballingal, Neil, Sweetbank, Markinch
1859 Ballingal, Wm., Sweetbank, Markinch
1857 Ballingall, D., Factor, Blairdrummond
1860 Ballingall, George, Clarilaw, St Boswells
1861 Ballingall, John, Dunbog, Newburgh
1863 Balmer, Thomas, Fochabers
1859 Barbour, G. F., of Bonskeid, 11 George Square, Edinburgh
1878 Barbour, Robt., Gillfoot, Kirkbean, Dumfries
1858 Barclay, Charles A., Aberdour House, Fraserburgh
1855 Barclay, George, Davochbeg, Golspie
1858 Barlay, George, Strocherie, Banff
1834 Barclay, George Robertson, late of Keavil, Dunfermline
1862 Barclay, J. W., M.P., 60 Dee Street, Aberdeen
1859 Barclay, Robert, Drums, Falkland
1865 Barclay, Thos., Skelbo Castle, Dornoch
1882 Barclay, Wm., Gordon Arms Hotel, Keith
1862 Barr, James, jun., Whiteshaw, Carluke
1875 Barr, William, Kerrylamont, Rothesay
1880 Barrett, Robert Bell, Skipton Castle, Skipton, Yorkshire
1863 Barrie, James, Harden Mains, Jedburgh
1846 Barstow, Chas. M., C.A., 32 India Street, Edinburgh
1867 Barthomew, Hugh, of Glenorchard, Torrance of Campsie
1855 Bartholomew, James, Duntarvie, Winchburgh
1875 Bartlemore, Robert, Netherhouses, Lochwinnoch
1880 Bartlemore, William, Solicitor, Paisley
1873 Barty, James W., Procurator-Fiscal, Dunblane
1861 Bathgate, James Ormiston, Tranent
1877 Bathie, Wm., Auctioneer, Arbroath
1873 Bauchope, Thomas, Land Surveyor East Brucefield, West Calder

Admitted
1877 Baxter, David, Ladyburn, Maybole
1854 Baxter, Edmund, W.S., 9 Rutland Square, Edinburgh
1882 Baxter, Frederick, Seedman, Inverness
1875 Bayley, George, of Manuel, 13 Regent Terrace, Edinburgh
1864 Bayne, John, Builder, Bridge of Allan
1869 Bayne, Lewis, Kinmel Park, Abergele
1876 Bean, Alex., Netherthird, Rothie Norman
1876 Bean, George, Balquain, Inverurie
1876 Bean, Wm., Newton, Cairnie, Huntly
1868 Beath, David, Auchmuir, Leslie
1882 Beaton, James Monyruy, Longside, Aberdeenshire
1854 Beattie, James, Newbie House, Annan
1879 Beattie, James, Rockdale Cottage, Perth
1882 Beattie, James Alexander, C.E., Aberdeen
1870 Beattie, Jn., Bulmansknowe, Canonbie
1877 Beattie, Simon, Annan
1878 Beattie, William J. P., Newbie, Annan
1875 Beck, Thomas Coker, Crowell Rectory, Tetsworth, Oxon.—*Free Life Member*
1882 Beckitt, C. R., Rockvilla Oil Mills, Port-Dundas, Glasgow
1876 Beedie, James, The Mains, Ardlaw, Fraserburgh
1876 Beedie, William, Pitgair, Fisherie, Turriff
1873 Begg, Robert, Blarnile, Luss.
1873 Begg, Robert Burns, Sheriff-Clerk, Kinross
1876 Beith, Donald, W.S., 15 Grosvenor Crescent, Edinburgh
1877 Beith, Gilbert, Ballochneck, Buchlyvie
1882 Belfrage, A. J., Cairdinnes, Haddington
1871 Belfrage, A. W., C.E., 1 Erskine Place, Edinburgh
1849 Belfrage, James, Samuelston, East Mains, Haddington
1867 Bell, Alexander, Akeld, Wooler
1868 Bell, Alexander, Stobahill, Lockerbie
1879 Bell, Alexander, Kirkton of Tealing, Dundee
1872 Bell, And., late Fans, Earlston
1856 Bell, David, Todhall, Cupar Fife
1871 Bell, George, Barns of Claverhouse, Dundee
1863 Bell, Jas., Quarry Brook, Maghull, Liverpool
1879 Bell, Dr. James M., Kingskettle, Fifeshire
1881 Bell, James, Gilchorn, Arbroath
1871 Bell, John, of Castlecreavie, 35 Dublin Street, Edinburgh
1876 Bell, John, Tyrie Mains, Fraserburgh
1880 Bell, John, Stenton, St Monance
1881 Bell, John B., Cauldcoats, Arbroath
1846 Bell, R., of Lunna, Belmont, Falkirk
1869 Bell, Robert, Sunnybank, Laira, Plymouth
1856 Bell, Thomas, Ballinshoe, Kirriemuir
1865 Bell, Thomas, Craigkennochy Terrace, Burntisland
1877 Bell, Thomas (Messrs Robey & Co.), Lincoln
1871 Bell, William, of Gribdæ, Kirkcudbright
1869 Bell, William, Kennacoil, Dunkeld
1882 Bell, William, Muirloch, Fowlis Easter, Lochee, Dundee
1876 Bell, William, Sheriffflats, Thankerton
1878 Bell, William, Todholes, Annan
1877 Bennet, Arthur, Bogside, Cardenden, Fife
1858 Benton, Joseph, Harthill, Whitehouse
1858 Benton, William, Cattie, Whitehouse
1882 Beresford, John George Massy, yr. of Macbiehill, Lamancha

Admitted
1869 Berry, George, Longleat, Horningsham Warminster, Wilts
1863 Berry, Walter, 11 Athole Crescent, Edinburgh
1882 Bertram, Archd. Douglas, Kersewell, Carnwath
1877 Bertram, David N., St Katherine's Works, Sciennes Street, Edinburgh
1874 Bertram, John, Hartside, Lauder
1854 Bertram, John S., Cranshaws, Duns
1854 Bertram, T. Hardy, C.E, 1 Foxgrave Road, Bekenham, Kent
1852 Bertram, William, of Kersewell, Carnwath
1882 Bertram, William, Lieut., 96th Regiment, yr. of Kersewell, Carnwath
1877 Bertram, Willam, St Katherine's Works, Sciennes Street, Edinburgh
1861 Berwick, David, Collairnie, Newburgh, Fife
1878 Berwick, John, Allanbank, Dumfries
1876 Best, John, Inveravon, Polmont
1857 Bethune, Admiral, of Balfour, C.B., Markinch
1848 Bethune, Alex., of Blebo, Cupar Fife
1883 Bethune, Angus, Seafield, Inverness
1833 Bethune, Colonel R., of Nydie, St Andrews
1864 Bethune, Murdo, Brae, Dingwall
1861 Bett, David Inches, Seaforth House, Bridge of Allan
1857 Bett, James, Bolfracks, Aberfeldy
1859 Beveridge, David, Buckthorns, Largo
1862 Beveridge, George, 248 High Street, Kirkcaldy
1869 Beveridge, Jas., Crombie, Dunfermline
1882 Beveridge, John, yr. of Kinneston, Leslie, Fife
1872 Beveridge, William, of Bonnyton, Dunfermline
1862 Beveridge, William, 248 High Street, Kirkcaldy
1881 Beveridge, William, jun., East Grange, Culross
1882 Bigg, Thomas, Leicester House, Great Dover Street, London
1878 Biggar, James, Grange Farm, Dalbeattie
1858 Biggar, T., of Chapelton, Dalbeattie
1859 Binnie, John, Birnieknows, Cockburnspath
1877 Binnie, Thomas, Auction Mart, Falkirk
1875 Binny, Andrew, 9 Hart Street, Edinburgh
1874 Bird, Ebenezer, Glenduckie, Newburgh, Fife
1858 Bird, James B., Fishwick, Paxton
1883 Birnie, Alex., Wellhouse, Beauly
1875 Birse, John, Summerfield, St Ola, Orkney
1874 Biscoe, T. Ramsay, of Newton, Inverness
1879 Bisset, Alexander, Farm Manager, Balfarg, Markinch
1873 Bisset, Hugh, Pitarrow, Laurencekirk
1873 Bisset, Thomas S., Agricultural Engineer, Blairgowrie
1865 Black, Alex., Shotover Estate Office, Wheatley, Oxon
1882 Black, Donald, jun., Clachan, Lochfynehead, Inveraray
1875 Black, Gavin, Coalmaster, Easter Moffat, Airdrie
1877 Black, George, Sea-View Works, Berwick-on-Tweed
1879 Black, George, Victoria Street, Perth
1880 Black, George, Mill of Craibston, Newhills, Aberdeen
1879 Black, George, Banker, Inverness

Admitted
1877 Black, James, of Auchentoshan, Duntocher
1871 Black, James, *Elgin Courant* and *Courier*, Elgin
1851 Black, James (late Factor, Ellon), London
1875 Black, John, Coalmaster, Airdrie
1859 Black, John, Setonhill, Longniddry
1859 Black, John, Ford, Westfield, Cornhill, Northumberland
1876 Black, John, Cortachy, Kirriemuir
1844 Black, Robert, Glasgow
1867 Black, Robert, Liberton Mains, Liberton
1878 Black, Thomas, Craigencrosh, Stranraer
1877 Black, William Connel, of Kailzie, Peebles
1876 Blackburn, James, Killearn House, Glasgow
1870 Blacklaw, Alex. Scott (late Milton of Arbuthnot, Fordoun), Brazil
1855 Blackley, John, 107 Bath Street, Glasgow
1857 Blacklock, Adam, late Minnygap, Moffat
1875 Blackwood, Alex., Stobo Mill, Stobo
1862 Blackwood, William, Publisher, 45 George Street, Edinburgh
1881 Blaikie, Wm. L., Holydean, St Boswells
1850 BLAIR, Sir Edward Hunter, of Blairquhan, Bart., Maybole
1869 Blair, E. J. Stopford, of Penninghame, Newton-Stewart
1860 Blair, James, of Glenfoot, Tillicoultry
1864 Blair, James, Aberfoyle
1874 Blair, Jn., W.S., 9 Ettrick Road, Edinburgh
1874 Blair, Patrick, Advocate, Sheriff-Substitute, Inverness
1879 Blair, Patrick, W.S., 7 York Place, Edinburgh
1882 Blair, Robert, Inversnaid Hotel, Loch Lomond
1844 Blair, Captain William Fordyce, of Blair, R.N., Dalry
1876 Blake, John, Dunrobin Mains, Golspie
1873 Bland, Thomas, Golden Dog Lane, Norwich, Norfolk
1836 Blane, Colonel Robert, C.B.
1843†BLANTYRE, Right Hon. Lord, Erskine House, Glasgow
1877 BLANTYRE, The Hon. the Master of, Scriberscross, Rogart
1861 Blues, Andrew A., 29 Minto Street, Edinburgh
1881 Blyth, Arthur Howard, Corston, Coupar-Angus
1879 Blyth, James, Leckiebank, Auchtermuchty
1851 Bogie, J., Hewels Field, Coleford, Gloucester
1863 Bolam, John, Bilton, Lesbury, Northumberland
1866 Bolam, Robert George, Berwick-on-Tweed
1858 Bolton, Joseph C., of Carbrook, M.P., Larbert
1882 Bone, William, Shalloch Park, Girvan
1879 Bonnor, G. H., 55 Grange Loan, Edinburgh
1853 Bontine, Wm. Cuninghame Graham, of Gartmore, Stirling
1879 Bonthrone, Alexander, Newton of Falkland, Falkland
1870 Boog, Thomas Elliot, Timpendean, Jedburgh
1842 Booth, Jas. Godfrey, Seed Merchant, Hamburg
1878 Boothby, Robert Cunningham, Hindhope, Selkirk
1878 Borland, John, Auchencairn, Closeburn, Thornhill

Admitted
1882 Borland, William, Townfoot, Closeburn, Thornhill
1859 Borthwick, Alex. Hay, Ladiesyde Lodge, Melrose
1873 Borthwick, Alex. Hay, Hopsrig, Langholm
1854 Borthwick, Gilbert, Barelees, Coldstream
1858 Borthwick, John, V.S , Kirkliston
1846 Borthwick, John, of Crookston, Heriot
1859 Borthwick, John James M., Lyneholm, Langholm
1838 Borthwick, Thomas Chalmers, Hopsrig, Langholm
1858 Borthwick, Wm. Henry, late Crookston, Gorebridge
1865 Borthwick, Wm., Whitehaven Castle, Whitehaven
1864 Borton, John, Barton House, Malton
1858 BOSWALL Sir Geo. Houstoun, of Blackadder, Bart., Chirnside
1876 Bower, Alfred Lance, Strathaird House, Broadford
1863 Bowhill, James, Banker, Ayton
1882 Bowick, Thomas, Bedford
1854 Bowie, Alexander, Mains of Kelly, Arbroath
1883 Bowie, John P., Mains of Kelly, Arbroath
1859 Bowman, James, Newark, St Monance
1879 Bowman, James, Square, Huntly
1865 Boyd, Colonel James Hay, of Townend, Symington, Kilmarnock
1872 Boyd, John, Simprin Mains. Coldstream
1861 Boyd, John B., of Cherrytrees, Kelso
1863 Boyd, William B.,of Faldonside, Melrose
1881 Boyle, Captain David, of Shewalton, R.N., Dreghorn, Ayrshire
1875 Brackenridge, Alexander, V.S., Stevenston Mains, Holytown
1869 Brakenridge, William, Rogerthorpe Hall, Pontefract
1865 Braid, Andrew, Humbie, Kirknewton
1878 Bramwell, John, Blackaddie, Sanquhar —*Free Life Member*
1858 Brand, Charles, Mains of Fordoun, Fordoun
1872 Brand, James, Dunbar
1855 Brash, James, Hallyards, Kirkliston
1876 Brebner, Alexander, Balquhindochy, Methlick
1876 Brebner, Robert, Lumbs, Lonmay, Aberdeen
1878 Brechin, James, 1 West Newington Terrace, Edinburgh
1872 Breingan, Alexander, Merchant, Helensburgh
1880 Bridges, Andrew, Engineer, North Berwick
1872 Brigham, John, Castle Gate Implement Works, Berwick-on-Tweed
1865 Brims, James, Thurso
1880 Broad, Anthony, Edenside Road, Kelso
1878 Broadfoot, Peter, West Mains, Kirkinner
1868 Broadwood, Thomas, of Fulfordlees, Crowhill, Dunbar
1878 Broatch, George, Thwait, Annan
1881 Brock, Hugh, V.S., 112 North Street Glasgow
1876 Brock, J. E., Overton, Kirkliston
1874 Brock, John, Aukhorne, Wick
1873 Brock, William, Barns of Clyde, Yoker
1857 Brockley, Robert M., Gourlaw, Rosewell
1875 Brodie of Brodie, Brodie Castle, Forres
1859 Brodie, James, 9 Nelson Street, Edinburgh
1848 Brodie, James C., Thorntonloch, Dunbar

Admitted
1869 Brodie, James W., Cloheen, Buttevant, Co. Cork
1872 Brodie, John, Palacehill, Ancrum, Jedburgh
1840 Brodie, J. Clerk, of Idvies, W.S., 26 Moray Place, Edinburgh
1877 Brodie, Thomas Dawson of Gairdoch, W.S., 9 Ainslie Place, Edinburgh
1878 Brodie, William, of Bush, Barkerland, Dumfries
1879 Brook, Edward, Hoddam Castle, Ecclefechan; Meltham Hall, Huddersfield
1874 Brooke, A. B., Cardney, Dunkeld
1855 Broomfield, Thomas, Lauder
1867 Bromfield, W. J., Old Greenlaw, Greenlaw, Duns
1875 Brotchie, George, Easington Estate Offices, Loftus, Saltburn by the Sea
1883 Brougham, Dr James Peter, Culduthel House, Inverness
1854 Broughton, Robert Henry, of Rowchester, Greenlaw, Berwickshire
1863 Brown, Adam (late Helmburn, Selkirk), Devonshire
1844 Brown, Alexander J. Dennistoun, of Balloch, Balloch Castle, Alexandria, N.B.
1873 Brown, Alexander, Banker, Oban
1852 Brown, Andrew, M.D., late Edinburgh
1879 Brown, Andrew, Factor for the Earl of Zetland, Kerse, Falkirk
1858 Brown, Archibald, Craig, Udny
1874 Brown, Archibald C., Giedstone Park, Bishopton
1866 Brown, David, Banker, Maybole
1878 Brown, David, Ellerslie, Kirkmahoe
1839 Brown, George, Watten Mains, Watten
1877 Brown, George, 57 Hanover Street, Edinburgh
1851 Brown, George, of Westfield, Cupar Fife
1860 Brown, James, Hardgrave, Lockerbie
1865 Brown, James, Whinpark, Kilmarnock
1861 Brown, James, St Andrews
1879 Brown, James W., Balmullo, Leuchars
1855 Brown, James, 80 South Portland Street, Glasgow
1873 Brown, James Geddes, Distiller, Keith
1877 Brown, James, Weston, Carnwath
1878 Brown, James, of Orchard, Carluke
1878 Brown, James Greig, Mouswald, Dumfries
1872 Brown, John, Murrays, Ormiston, Tranent
1857 Brown, John, Boghall, Biggar
1882 Brown, John, Brownville, Kilsyth
1876 Brown, John, of Colton, Dunfermline
1860 Brown, John, Ingliston, Dumfries
1877 Brown, John, Lissensmoss, Kilwinning
1878 Brown, John, Airds of Kirkconnell, New Abbey, Dumfries
1880 Brown, John, East Housebyres, Galashiels
1882 Brown, John, Shields, East Kilbride
1882 Brown, John Alexander Harvie, of Quarter, Dunipace, Larbert
1878 Brown, John Gordon, Lochanhead, Dumfries
1876 Brown, John H. (late Aberchalder, Fort Augustus), New Zealand
1860 Brown, John C., Between-the-Waters, Ecclefechan
1870 Brown, Jos., Hermitage, Dalbeattie
1883 Brown, Joseph, Little Endovie, Alford
1876 Brown, Joseph, Sootywells, Fordoun
1861 Brown, Oliphant, Shiel, New Galloway
1856 Brown, Peter, Craigton, Bishopton
1871 Brown, Peter, Milton of Luncarty, Redgorton
1881 Brown, Richard, C.A., 29 St Andrew Square, Edinburgh

Admitted
1875 Brown, Thomas, Pentland Mains, Loanhead
1849 Brown, Thomas, Weston, Dunsyre, Dolphinton
1863 Brown, Thomas, late Locherlour, Crieff
1863 Brown, Thomas, 6 Argyle Crescent, Joppa
1877 Brown, Thomas Morris, Crawfordton Lodge, Thornhill
1882 Brown, William, Currievale, Currie
1871 Brown, William, Factor, Earlsmill, Forres—*Free Life Member*, 1873
1872 Brown, William, Parkgatestone, Biggar
1854 Brown, William, of Dunkinty, Elgin
1873 Brown, William, Pitnamoon, Laurencekirk
1874 Browne, A. H., Doxford Hall, Chathill, Northumberland
1873 Browne, Colvile, Park House, Long Melford, Suffolk—*Free Life Member*
1875 Brownlee, James, East Whitburn Farm, Whitburn
1872 Brownlie, Alex., Haughhead, Earlstoun
1877 Brownlie, James, Nether Alderston, Mid-Calder
1877 Brownlie, Robert, Bogside, Newmains, Carluke
1875 Brownlie, Thomas, 182 Hope Street, Glasgow
1868 Bruce, Alexander, Millhill, Mintlaw
1879 Bruce, Andrew, Jordanston, Meigle
1874 Bruce, Andrew Hamilton Tyndall, of Falkland, Ladybank
1878 Bruce, David C., Broadlands, Huntly
1877 Bruce, Edward, 26 Greenside Place, Edinburgh
1864 Bruce, George, Pennan Farm, Fraserburgh
1868 Bruce, George, Heatherwick, Keith Hall
1874 Bruce, George, Seedsman, 35 Market Street, Aberdeen
1871 Bruce, George C., C.E., late Edinburgh
1875 Bruce, Henry, of Ederline, Lochgilphead
1865 Bruce, James, Burnside, Fochabers
1876 Bruce, James, Collithie, Gartly
1869 Bruce, James, March Hill, Dumfries
1868 Bruce, J., Inverquhomery, Mintlaw
1829 Bruce, John, of Sumburgh, Lerwick
1863 Bruce, J., jun., Sumburgh, Lerwick
1842 Bruce, John, W.S., 7 Melville Crescent, Edinburgh
1876 Bruce, Peter, Myreton, Insch, Aberdeen
1868 Bruce, Robert, Manor House Farm Great Smeaton, Northallerton
1871 Bruce, Robert, Uddingston
1880 Bruce, Lieut.-Gen. Robert, of Glendeuglie, Milnathort
1875 BRUCE, Hon. Robert Preston, M.P., Broomhall, Dunfermline
1852 BRUCE, Hon. Thomas Charles, M.P., 42 Hill Street, Berkeley Square, London, W.
1855 Bruce, Thomas, of Arnot, Kingsdale, Kennoway
1864 BRUCE, Sir William C., of Stenhouse, Bart., Falkirk
1875 Bruce, William L., late Glenkill, Lamlash
1870 Bruges, Edward C., Dalgig, New Cumnock
1866 Brunton, James, Broomlands, Kelso
1867 Brunton, J. S., Ladhope House, Galashiels
1870 Bryan, F. G. D., Drumpellier, Coatbridge
1878 Bryce, Andrew, Craigentinny, Jock's Lodge, Edinburgh

Admitted
1865 Bryce, James, East Whitburn, Whitburn
1882 Bryce, J. H., M.R.C.V.S., 69 Port Street, Stirling
1877 Bryce, William C., 26 South Back of Canongate, Edinburgh
1880 Bryden, John, New Mains, Scone, Perth
1878 Bryden, William, Ironmonger, Lockerbie
1862 Brydon, Adam, Netherbarns, Galashiels
1864 Brydon, H., Kinnelhead, Moffat
1850 Brydon, James, Kinnelhead, Moffat
1864 Brydon, James, jun., Holm of Dalquhairn, Dalry, New Galloway
1873 Brydon, Robert, The Dene, Seaham Harbour—*Free Life Member*
1883 Brydon, Thomas T., Burncastle, Lauder
1879 Brydone, Walter S., Land Steward, Portmore, Eddleston
1850 Bryson, Robert, Merchant, Glasgow
1852 Bryson, W. G., Cullen House, Cullen
1828*†BUCCLEUCH and QUEENSBERRY, His Grace the Duke of, K.G., Dalkeith
1835 BUCCLEUCH and QUEENSBERRY, Her Grace the Duchess of
1880 Buchan, Alexander, 72 Northumberland Street, Edinburgh
1854 Buchanan, A., Whitehouse, Stirling
1857 Buchanan, Alexander, Norwood, Milngavie
1881 Buchanan, Dr Alexander, Tiree, Tobermory
1838 Buchanan, Andrew, of Auchintorlie, Bowling
1881 Buchanan, Angus, Fannans, Taynuilt
1870 Buchanan, Archibald, of Curriehill, Currie
1849 Buchanan, Lieut.-Col. David C. R. Carrick, of Drumpellier, Coatbridge
1873 Buchanan, David, Garscadden Mains, New Kilpatrick
1853 Buchanan, Dun., Auchenbreck, Colintraive, Greenock
1877 Buchanan, D. M'L. B., of Boquhan, Killearn
1878 Buchanan, Francis Wellesly, Leny, Callander
1882 Buchanan, George, of Arden, Bridge of Allan
1873 BUCHANAN, Sir George H. Leith, of Ross, Bart., Ross Priory, Alexandria
1851 Buchanan, Isaac, Hamilton, Canada
1876 Buchanan, Captain J. R. Gray, of Scotstone, Eastfield House, Cambuslang
1872 Buchanan, John, C.E., 24 George Street, Edinburgh
1877 Buchanan, John, Gartness, Killearn
1876 Buchanan, Robt., Blairquhosh, Strathblane
1876 Buchanan, Robert, Letter Farm, Killearn
1842 Buchanan, Walter, Glasgow
1875 Buchanan, William, 391 Parliamentary Road, Glasgow
1863 Buist, Robert, Cattle Salesman, 32 Castle Terrace, Edinburgh
1865 Bulloch, Ar., Milliken, East Kilpatrick
1875 Bulloch, Matthew, 11 Park Circus, Glasgow
1882 Buntine, J. R., Sheriff-Substitute, Stirling
1870 BURDETT-COUTTS, Right Hon. Baroness, 1 Stratton Street, Piccadilly, London
1874 Burn, Forbes, Hardacres, Coldstream—*Free Life Member*
1863 Burn, John, Ednam, Kelso
1873 Burness, Wm., Redford, Laurencekirk
1877 Burnet, James, Dolphington, Cramond Bridge
1877 Burnett, Alex. E., W.S., 47 Heriot Row, Edinburgh

Admitted
1867 Burnett, Major-General Francis Claude, of Gadgirth, Tarbolton
1848 Burnett, George, Advocate, 21 Walker Street, Edinburgh
1858 BURNETT, Sir Robert, of Leys, Bart., Crathes Castle, Banchory
1838 Burnley, W. F., 24 Ainslie Place, Edinburgh
1872 Burns, And., Harelaw, Longniddry
1865 Burns, Jas. C., of Glenlee, Hamilton
1865 Burns, J., of Castle Wemyss, Greenock
1861 Burns, John William, of Kilmahew, Cardross
1875 Burr, Alexander, Tulloford, Old Meldrum
1877 Burr, John M., Netherton, Fyvie, Aberdeen
1867 Burr, Rev. P. Lorimer, Lundie Manse, Dundee
1873 Burrell, James, Denovan Mains, Denny
1854 Burroughs, Lieut.-General F. W. Traill, C.B., of Rousay, Orkney
1881 Burt-Wright, W., Auchinvole Castle, Croy, Dumbartonshire
1867 Burton, J. Tait, of Toxside, Gorebridge
1857 Burton, J., Rosewell Mains, Rosewell
1882 Burton, Matthew Bernard, Rosewell Mains, Rosewell
1869†BUTE, Most Noble the Marquis of, K.T., Mount Stuart, Rothesay
1861 Buttar, David, Corston, Coupar-Angus
1882 Buttar, Thos. A., Corston, Coupar-Angus—*Free Life Member*
1877 Butter, Albert, Union Bank, Perth
1825 Butter, Arch., of Faskally, Pitlochry
1882 Butters, M. W., Charlemont House, Cathcart
1876 Buyers, James, junior, Easter Brakie, Friockham
1878 Byres, Jas. Edward, Greenrae, Canonbie

1844 Cadell, Alex. Todd, R.A., V.C., Madras
1856 Cadell, Henry, of Grange, Bo'ness
1869 Cadzow, James, Clarendon, Linlithgow
1872 Cadzow, Robt., Thornyhill, Carmichael, Lanark
1878 Caird, Alex. M'Neel, 13 Wardie Avenue, Edinburgh
1853 Caird, Sir James, of Cassencary, K.C.B., 8 Queensgate Gardens, London
1864 Cairns, James, Balquharn, Menstrie
1881 Cairns, James, 67 South Methven Street, Perth
1870 Cairns, John, Parkhill House, Newburgh, Fife
1861 Cairns, William, Belhie, Auchterarder
1871 Cairns, Robert, Bertha Park, Perth
1872 Calder, Adam, Halterburn, Kelso
1853 Calder, Francis, Yetholm Mains, Kelso
1882 Calder, James, of Ardargie, Forgandenny, Perthshire
1857 Calder, James, Colgrain, Cardross
1870 Calder. John, Muirton, Elgin
1857 Calder, Robert, Little Swinton, Coldstream
1858 Calder, R., Whitehouse, Lumphanan
1851 Calder, W., Cattle Salesman, 19 Archibald Place, Edinburgh
1872 Calder, W. A., Oxenrig, Coldstream
1841 Caldwell, Fred., of Missinish, 4 Hanover Terrace, Regent's Park, London
1878 Caldwell, Hugh, of Braes, Kilbarchan
1862 Caldwell, Wm., Boydstone, Ardrossan
1857 Cameron, Alex., 24 Albyn Street, Glasgow
1865 Cameron, Alex. (of Mainhouse), Highfield, Elgin
1883 Cameron, Colin M., Balnakyle, Munlochy

Admitted
1859 Cameron, Donald, of Lochiel, M.P., Auchnacarry, Fort-William
1882 Cameron, Donald, Inversanda, Fort-William
1861 Cameron, D. Colin, Tallisker, Broadford, Skye
1869 Cameron, Duncan, Banker, Thurso
1877 Cameron, Duncan, Kinloch Rannoch
1881 Cameron, Duncan, Fettes, Inverness
1878 Cameron, Hugh Ewen, Clunes, Fort-William
1881 Cameron, James, Murthill Farina Works, Forfar
1878 Cameron, Dr James Angus, of Firhall, Nairn
1880 Cameron, J. M., 52 Lime Street, London
1871 Cameron, John, Glackcriska, Appin
1881 Cameron, John, Keil, Fort-William
1876 Cameron, J. C., of Garrows, Amulree, Dunkeld
1862 Cameron, William, late Factor, Kingussie
1837 Campbell, Alex., of Auchindarroch, Lochgilphead
1835 Campbell, Alexander, of Cammo, 6 Charlotte Square, Edinburgh
1868 Campbell, Alex., Belmont, Aberdeen
1863 Campbell, A. H., of Little Grove, Herts
1857 CAMPBELL, Lieut.-Col.. Sir Arch. C., of Blythswood. Bart., Renfrew
1876 CAMPBELL, Sir Archibald S. L., of Succoth, Bart., 23 Moray Place, Edinburgh
1880 Campbell, Rev. Arch., Assapool, Bunessan, Mull
1868 Campbell, A., Factor, Rossdhu, Luss
1865 Campbell, Lieut.-Col., of South Hall, Colintraive
1865 Campbell, Lieut.-Col. A. H., Ochtertyre, Stirling
1854 Campbell, Arthur, of Catrine, W.S., 4 Randolph Crescent, Edinburgh
1864 Campbell, C. Macpherson, of Ballimore, Dalvey, Forres
1853 Campbell, Colonel Chas. V. H., of Nether Place, Mauchline
1847 Campbell, C., of Colgrain, Camis Eskan House, Helensburgh
1882 Campbell, Colin, 82 John Street, Bridgeton, Glasgow
1838 Campbell, C. G., of Stonefield, Tarbert
1858 Campbell, Rear-Admiral Colin Yorke, of Barbreck, Lochgilphead
1875 Campbell, Captain Duncan, of Inverneil and Ross, Ardrishaig
1879 Campbell, Duncan, Stronuich, Glenlyon, Aberfeldy
1868 Campbell, Major D. P. (of Ballievolan, Bonaw), New Club, Edinburgh
1858 Campbell, D. T., Duiletter, Dalmally
1882 Campbell, Edward P., Lieut., 42d Highlanders, Stirling
1882 Campbell, Farquhar, of Ormsary, Ardrishaig
1871 Campbell, George, Rhodes, North Berwick
1873 Campbell, George, Kilkea, Mageny, Co. Kildare—*Free Life Member*
1868 Campbell, George William, late Mayfair, London
1867 Campbell, Hector A., Ardfenaig, Bunessan, Mull
1882 Campbell, Captain Henry John Fletcher, R.N., Boquhan, Stirling
1834 CAMPBELL, Sir Hugh Hume, of Marchmont, Bart., Duns
1838 CAMPBELL, Sir James, of Aberuchil, Bart., Wheatmead Park, Lydney
1883 Campbell, James, of Jura, Argyllshire
1875 Campbell, James, Rosebank, Gatehouse
1838 Campbell, James, London
1847 Campbell, J., of Tillichewan, Alexandria
1877 Campbell, James, Ormaig, Lochgilphead
1849 Campbell, James A., of Stracathro, M.P., Brechin
1860 Campbell, James G., of Killyleoch, 23 Windsor Street, Edinburgh
1874 Campbell, John, of Kilberry, Tarbert
1848 Campbell, John, of Possil, Torquay
1846 Campbell, J. L., of Achalader, Blairgowrie
1874 Campbell, John, 15 Exchange Square, Glasgow
1877 Campbell, John, Glenforsa, Aros, Mull
1863 Campbell, John Graham, of Shirvan, Castleton, Lochgilphead
1877 Campbell, John Stephen Deans, of Corraith, Ayrshire
1883 Campbell, Neil M., S.S.C., Nairn
1838 Campbell, Ord Graham, 5 Oxford Terrace, Edinburgh
1883 Campbell, R. Douglas, Redheugh, Nairn
1861 Campbell, R. F. F., of Craigie, M.P., Ayr
1877 Campbell, Robert Hume, of Glendaruel, Argyllshire
1858 Campbell, Silvester, Kinellar, Blackburn, Aberdeen
1876 Campbell, Silvester, jun., Tofthills, Kintore, Aberdeen
1860 Campbell, Thomas, Croftness, Aberfeldy
1863 Campbell, T. H., of Millfield, Polmont
1856 Campbell, T. W., of Walton Park, Dalbeattie
1858 Campbell, William, Solicitor, 14 Almada Street, Hamilton
1878 Campbell, Wm., late Carterton, Lockerbie
1871 CAMPERDOWN, Right Hon. the Earl of, Camperdown, Dundee
1879 Cannon; James, Urioch, Castle Douglas—*Free Life Member*
1877 Cannon, John, Congeith, Kirkgunzeon
1863 Cant, James, Orr Bridge, Kirkcaldy
1879 Cantlie, Charles A., late Keithmore, Dufftown
1850 Carfrae, T., Land Surveyor, 9 Osborne Terrace, Edinburgh
1845 Carlyle, T. J., of Templehill, Waterbeck, Ecclefechan
1881 Carmichael, George Henry Gibson, Castle Craig, Dolphinton
1880 Carmichael, John, Coldstream
1880 Carmichael, Peter, Bowmore, Islay
1882 Carmichael, Peter, jun., Macharie, Port Ellen, Islay
1881 Carmichael, Thomas David Gibson, yr. of Skirling, Castle Craig, Dolphinton
1856 CARMICHAEL, Sir William H. Gibson, of Castle Craig and Skirling, Bart., Dolphinton
1856 CARNEGIE, Hon. Charles, St Andrews
1847 Carnegie, D., of Stronvar, Lochearnhead
1881 Carnegie, F. P., Merchant, Perth
1869 Carnegie, Henry L., of Kinblethmont, Arbroath
1852 Carnegie, James, W.S., 16 Windsor Street, Edinburgh
1880 Carnegie, James, of Aytoun Hill, Newburgh, Fife
1858 Carnegie, William, of Dunlappie, Brechin
1858 Carnegie, W., yr. of Dunlappie, Coul, Forfar
1880 Carnegie, Wm. C., Sarsden, Chipping Norton
1850 Carnegy, John, Glasgow

Admitted
1869 Carphin, Jas. Rhind, C.A., 14 Hanover Street, Edinburgh
1878 Carr, Robert, Felkington, Norham, Berwick-on-Tweed—*Free Life Member*
1876 Carre, Thomes A. Riddell, of Caverscarre, St Boswells
1871 Carrick, Charles, Baad, Stirling
1872 Carrick, Thos. A., Easter Cambusdrennie, Stirling
1854 Carruthers, John, of Miln, Kirkhill, Moffat
1870 Carruthers, John, Tundergarth, Lockerbie
1876 Carruthers, Joseph, Annan Bank, Lockerbie
1882 Carruthers, Joseph, British Linen Company Bank, Sanquhar
1875 Carruthers, Robert, *Courier* Office, Inverness
1870 Carruthers, R. B., Huntingdon Lodge, Dumfries
1838 Carstairs, Drysdale, Hailes House, Fairfield, Liverpool
1869 Carswell, David, of Rathillet, Straiton, Leuchars
1880 Carter, James (Corn Exchange, Berwick), 5 Mayfield Gardens, Edinburgh
1868 Cartwright, T. R. B. Leslie Melville, Melville House, Ladybank
1861 Carver, John, Kinloch, Meigle
1871 CATHCART, Lieut.-Colonel the Hon. Adolphus F., Caldra, Duns
1877 Cathcart, James P., 135 Buchanan Street, Glasgow
1857 Cathcart, R., of Pitcairlie, Auchtermuchty
1872 Catley, W. E., of Edderton, Tain
1866 Cattanach, A., of Auchintorlie, Paisley
1876 Caven, Thomas, Birkshaw, Glencairn, Dunscore
1871 Caverhill, John, Greenburn, Reston
1839 CAWDOR, Right Hon. the Earl, Stackpole Court, Pembroke, South Wales
1877 Cecil, Right Hon. Lord Arthur, Orchard Mains, Innerleithen
1877 Cecil, Right Hon. Lord Lionel, New Hall, Traquair, Innerleithen
1874 Chalmers, Arch., of Kipp, Dalbeattie
1871 Chalmers, Jas., Shielhill, Stanley, Perth
1879 Chalmers, John, Westwood, Stanley, Perth
1860 Chalmers, Thomas, of Longcroft House, Linlithgow
1864 Chambers, Robert, 10 Claremont Crescent, Edinburgh
1870 Chambers, Thomas, of Pelutho, Abbey Town, Cumberland
1864 Chambers, William, Souterton, Forgue Huntly
1849 Chancellor, J. G., of Shieldhill, Biggar
1857 Chandler, Henry, Manchester
1859 Chaplin, Geo. C. Child, of Colliston, Arbroath
1880 Chaplin, George Robertson, of Murlingden, Brechin
1880 Chaplin, Capt. Thomas Robertson, Lawhead House, Carnwath
1873 Chapman, James, Ballencrieff Mill, Bathgate
1882 Chapman, Wm., Meadowhead, Airdrie
1873 Charles, John, Town and County Bank, Inverurie
1876 Charlton, John, Corn Merchant, Dumfries
1867 Charlton, Matthew, jun., Browdeanlaws, Jedburgh
1860 Cheape, Lieut.-Col. Charles, of Kilundine, Lochaline, Morven, Argyllshire
1864 Cheape, G. C., of Strathtyrum, Wellfield, Strathmiglo

Admitted
1881 Cheape, James, yr. of Lathockar, St Andrews
1860 Chirnside, G., Edrington House, Berwick
1881 Chirnside, John, 14 Saxe Coburg Place, Edinburgh
1865 Chisholm, The, Erchless Castle, Inverness
1865 Chisholm, Duncan, Craskie, Cannich, Beauly
1874 Chisholm, John, Chapel Rossan, Stranraer
1854 Chisholm, John, Auchteraive, Fort Augustus
1874 Chisholm, John, Ironmonger, 8 Church Street, Inverness
1850 Christie, Andrew, Glencairn, Oreti, Southland, New Zealand
1850 Christie, Charles J., Westbank, Tranent
1862 Christie, C. J., Cherrybank, Newhaven Road, Edinburgh
1879 Christie, Francis Walter, Dairsie Mains, Cupar Fife
1881 Christie, Gilbert, Auchlyne, Killin
1873 Christie, James, Cultenhove Mains, St Ninians
1835 Christie, Captain James, 1 Torphichen Street, Edinburgh
1876 Christie, James M., Sunnyside, Prestonkirk
1846 Christie, John, 10 Pittville Parade, Cheltenham
1872 Christie, John, of Cowden, 19 Buckingham Terrace, Edinburgh
1874 Christie, John, West Mains, Haddington
1861 Christie, P., Mains of Scotscraig, Tayport
1857 Christie, T. C., of Bedlay, Moodiesburn
1871 Chrystal, George, Engineer, Perth
1878 Chrystal, Robert, 1 Charing Cross, Glasgow
1878 Chrystal, William, Gilchristland, Thornhill
1855 Church, D. M., 25 Minto Street, Edinbutgh
1838 Church, J., Sark Tower, Canonbie
1859 Clapperton, James, Garvald Mains, Prestonkirk
1855 Clapperton, John, Gifford
1864 Clapperton, John, Gillsland, Spylaw Road, Edinburgh
1877 Clark, Andrew, Islay
1869 Clark, Archd., Bencorrum, Dunoon
1853 Clark, Archd., Inverchapple, Kilmun
1838 Clark, Francis William, of Ulva, Aros
1864 Clark, James, Kirklandhill, Dunbar
1857 Clark, John, Flender, Busby
1869 CLARK, Sir John F., of Tillypronie, Bart., Tarland
1872 Clark, John M., Kinchyle; Fitzjohns Avenue, London
1867 Clark, Lachlan, Tangy, Campbeltown
1869 Clark, Matthew, late Croftongea, Alexandria
1872 Clark, M., of Little Culmain, Crocketford, Dumfries
1871 Clark, Robert, Taybank House, Errol
1880 Clark, Thomas, Oldhamstocks Mains Cockburnspath
1879 Clark, Thomas K., Carriage Builder Crieff
1873 Clark, William, New Mousen, Belford
1857 Clark, William, Shawhill, Monkton
1871 Clark, William, Bonnygate, Cupar Fife
1881 Clark, W. A., Crutherland, East Kilbride
1873 Clark, Rev. William Aitkinson, Belford Hall, Belford, Northumberland
1883 Clarke, G. G., Eriboll, Lairg
1869 Clarke, John, Maryland, Uddingston

Admitted
1873 Clarke, William, Hopewell, Tarland
1879 Clarkson, Alex., Pretts Mill, Thankerton
1854 Clay, John, Kerchesters, Kelso
1870 Cleghorn, Hugh, M.D., of Stravithy, St Andrews
1875 Clelland, James, Knockenlaw, Kilmarnock
1877 Clench, Fred. (Messrs Robey & Co.), Lincoln
1876 Clerk, Sir George Douglas, of Penicuik, Bart., Penicuik
1875 Clerkson, Alexander, Ormiston Villa, Kirknewton
1871 CLINTON, Right Hon. Lord, Fettercairn House, Fettercairn
1850 Clouston, Peter, 1 Park Terrace, Glasgow
1871 Clyne, David, Reaster House, Wick
1852 COATS, Sir Peter, of Auchendrane, Ayr
1852 Coats, Thomas, of Ferguslie, Paisley
1877 Cochran, Robert, Caldons, Stoneykirk, Stranraer
1882 Cochran, William, Overdale, Dunblane
1880 Cochrane, Adam L., of Kingsknowes, Galashiels
1861 Cochrane, Alex., of Ashkirk, Hawick
1858 Cochrane, James, Waterside Lodge, Newburgh, Aberdeen
1877 Cochrane, James, Eglinton Hotel, Dalmellington
1882 COCHRANE, Hon. Thos., Hawkhead, Paisley
1866 Cockburn, Arch. D., 6 Athole Crescent, Edinburgh
1838 COLEBROOKE, Sir Thomas Edward, of Crawford, Bart., M.P., Abington
1843 Collier, John, Hatton House, Carnoustie
1857 Collyer, Wm. D., of Cormiston, Biggar
1879 Colquhoun, Dugald, Manager, Vitriol Works, Carnoustie
1873 Colquhoun, George, Shemore, Luss
1872 COLQUHOUN, Sir James, of Luss, Bart., Ross-dhu, Luss
1850 Colquhoun, J., Corkerhill, Pollokshaws
1874 Colquhoun, Rev. J. E. Campbell, of Killermont, Chartwell, Westerham, Kent
1872 Colthart, Robert, Achateny, Strontian
1851 COLVILLE of Culross, Right Hon. Lord, K.T., 41 Eaton Place, London
1871 Colvin, James E., Wester Manbeen, Elgin
1873 Common, James, Waterbeck, Ecclefechan
1878 Common, John, South Corrielaw, Lockerbie
1871 Comrie, Alexander, Albany Terrace, Rothesay
1874 Conacher, P. M., Gallin Cottage, Glenlyon, Aberfeldy
1873 Coningham, W. J. C., late High Street, Haddington
1877 Connal, Michael, of Arngomery Kippen
1850 Connal, William, Solsgirth, Dollar
1878 Connell, J. W. F., of Auchencheyne, Thornhill
1877 Connochie, William Dixon, V.S., Selkirk
1860 Constable, James, of Glencraig, Lochgelly
1871 Cook, Charles, 17 Golden Square, Aberdeen
1882 Cook, Henry, W.S., 61 Castle Street, Edinburgh
1841 Cook, John, W.S., 11 Great King Street, Edinburgh
1876 Cook, Thomas W., Castelton of Asloun, Alford
1865 Cooper, Alexander, Solicitor, Elgin
1874 Cooper, Wm S., of Failford, New Club, Edinburgh

Admitted
1876 Copland, Alexander, Manager, Aberdeen Commercial Co., Aberdeen
1855 Copland, Robert, Mill of Ardlethen, Ellon
1864 Copland, John, Nunholm, Dumfries
1877 Corbett, Thos., Perseverance Iron Works, Shrewsbury
1883 Cordiner, Alex., Machrimore, Southend, Campbeltown
1840 Cordiner, W. F., Mormond House Cortes, Lonmay
1878 Cormack, John F., Solicitor, Lockerbie
1860 Corrie, Adam, South Park, Kirkcudbright
1864 Cotesworth, Robt., Cannes, France
1875 Coubrough, Archibald, High Craigton, Milngavie
1852 Coubrough, J., Blairtummoch, Lennoxtown
1876 Coubrough, Wm., Sornfallow, Wiston, Biggar
1859 Coupar, John, Balrownie, Brechin
1869 Coupar, John Cardno, of Craigiebuckler, Aberdeen
1882 Couper, James, Chemical Manufacturer, Craigforth, Stirling
1865 Cousin, George, 140 Princes Street, Edinburgh
1864, Cousland, James, late Banker, Denny
1858 Coutts, William, Banff
1864 Coventry, Wm., Pleasance, Aberdour, Fifeshire
1836 Cowan, C., of Logan House, Wester Lea, Murrayfield
1860 Cowan, Charles W., yr. of Logan House, Penicuik
1875 Cowan, Daniel, 5 Oswald Street, Glasgow
1869 Cowan, George, Mains of Park, Glenluce
1872 Cowan, George, Valleyfield, Penicuik
1873 Cowan, James, 10 North Queen Street, Glasgow
1874 Cowan, James, 85 Royal Terrace, Edinburgh
1858 Cowan, John, of Beeslack, Milton Bridge
1879 Cowan, John, W.S., 12 Hill Street, Edinburgh
1879 Cowan, John, Metal Merchant, 21 Albert Street, Edinburgh
1854 Cowan, Richard, St Kilda, Sidmouth, Devon
1861 Cowan, Robt., W.S., 9 Carlton Terrace, Edinburgh
1862 Cowan, Robert, 18 Greenside Street, Edinburgh
1881 Cowan, Walter, Clathick House, Crieff
1870 Cowe, George, Balhousie, Carnoustie
1872 Cowe, Peter, Lochton, Coldstream
1870 Cowe, Robert, Old Castles, Chirnside
1872 Cowe, Wm., Butterdean, Grant's House
1868 Cowie, Alexander, Darley, Auchterless, Turriff
1853 Cowie, Alex., Crombly Bank, Ellon
1852 Cowie, James, 2 Capel Court, Bartholomew Lane, London
1881 Cowpar, Jas., Over Migvie, Kirriemuir
1882 Cox, George Addison, of Invertrossachs, Callander
1882 Cox, George Methven, Beechwood, Dundee
1882 Cox, Jas. C., Invertrossachs, Callander
1879 Crabb, Wm., Chemical Works, Silloth, Cumberland
1877 Crabbie, John, of Duncow, 22 Royal Terrace, Edinburgh
1877 Crabbie, John M., yr. of Duncow, 33 Chester Street, Edinburgh
1879 Craig, Alex., Over Milton, East Kilbride
1870 Craig, Daniel, Barr, Sanquhar
1855 Craig, David, 4 Pitt Street, Portobello
1882 Craig, Hugh, Ardoran, Oban

Admitted
1875 Craig, H. V. Gibson, W.S., Lilliput, Swansea
1850 Craig, Jas., 38 Manor Place, Edinburgh
1857 Craig, James, of Craigdarroch, Monktonhill, Monkton
1882 Craig, James, Holm of Caaf, Dalry, Ayr
1880 Craig, James, Robroyston, Bishopbriggs
1863 CRAIG, Sir James H. Gibson, of Riccarton. Bart., Currie
1882 Craig, John, of Bellsfield, Blantyre
1857 Craig, John, Guelt, Cumnock
1867 Craig, John, Jellyhill, Bishopbriggs
1878 Craig, John, Glencruitten, Oban
1879 Craig, John, Innergeldie, Comrie—*Free Life Member*
1860 Craig, Josh., of Threecrofts, Lochrutton, Dumfries
1882 Craig, Matthew, Ryesholm, Dalry, Ayr
1870 Craig, Robt., Carruchan, Troqueer, Dumfries
1867 Craig, Robert, Campbeltown
1868 Craig, Robert (Francis Lowe & Co.), Chapelton, Jamaica
1882 Craig, Robert, Flashwood, Dalry, Ayr
1859 Craig, Wm , Laurel Bank, Dumfries
1870 Craig, Wm., Buchley, Bishopbriggs
1877 Craig, Dr. William, 7 Lothian Road, Edinburgh
1855 Craig, William C., Anniston, Biggar
1862 Craig, W., Urquhart, Dunfermline
1875 Craig, William, Implement Maker, Old Meldrum
1880 Craig, Wm., Monktonhill, Monkton—*Free Life Member*
1873 Craighead, James, Sillyflat, Bervie
1858 Craigie, Wm. Roper, Tom-na-Droighne, Ballinluig
1878 Craik, George, Argrennan Mains, Tongland, Ringford
1877 Craik, John, The Bush, Roslin
1863 Craike, Charles (late Esbie, Lochmaben), Australia
1878 Cran, George, Old Morlich, Inverkindie
1876 Cran, James, jun., Knockandoch, Whitehouse, Aberdeen
1871 Cran, John, Kirkton, Inverness
1872 Cranston, James, Holstane, Thornhill
1849 Cranstoun, George Cranstoun Trotter, of Dewar, Harvieston, Gorebridge
1881 Craw, Henry Hewat, Foulden West Mains, Chirnside
1882 Craw, James, Whitsome Hill, Chirnside
1850 Crawford, Adam, Royal Terrace, Edinburgh
1882 Crawford, Alexander, Meikle Dripps, Busby
1853 Crawford, Alex., Writer, Duns
1871 Crawford, Andrew, Tayhill, Perth
1860 Crawford, Daniel, late Dykehill, Milton of Campsie
1882 Crawford, George, High Knoweglass, East Kilbride
1881 Crawford, James, Brydekirk Mains, Annan
1855 Crawford, James Coutts, of Overton, Strathaven
1854 Crawford, John, The House of Tongue, Lairg
1877 Crawford, John, High Street, Alloa
1865 Crawford, John, Milnstonford, West Kilbride
1857 Crawford, P., Carruchan, Troqueer
1875 Crawford, Robert, of Lochsannish, Campbeltown
1866 Crawford, R., Balbougie, Inverkeithing
1860 Crawford, Wm., Balgarvie, Perth
1881 Crerar, Alexander, Innerhadden, Rannoch
1875 Crerar, Donald, Moreinish, Killin
1861 Crerer, John, Drumatherty, Dunkeld

Admitted
1850 Creyk, Dr A., Dalvey, Advie, Strathspey
1838 Crichton, Hew, S.S.C., 13 Nelson Street Edinburgh
1849 Crichton, Hew Hamilton, W.S., 13 Nelson Street, Edinburgh
1878 Crichton, James (Hamilton & Crichton), 41 George Street, Edinburgh—*Silversmith to the Society*
1847 Crichton, Jas. Arthur, Advocate, Sheriff of Fife, 13 Nelson Street, Edinburgh
1859 Crichton, Wm., Live Stock Agent, Haddington
1870 Critchley, J. A., Stapleton Tower, Annan
1872 Croall, John, Coach Works, Kelso
1875 Croall, Robert, Craigcrook Castle, Edinburgh
1858 Crombie, Alex., of Thornton, W.S., Albert Buildings, Edinburgh
1870 Cromarty, Wm., Widewall, St Margaret's Hope
1879 Crosbie, Wm. G., S.S.C., Dumfries
1880 Cross, Alexander, 60 North Bridge, Edinburgh
1878 Cross, Alex., jun., Eastbank House, Langbank
1845 Cross, David (of Knockdon, Maybole) Seed Merchant, Hope Street, Glasgow
1881 Cross, David, jun., Eastbank House Langbank
1852 Cross, Robert, Uddingston
1865 Crossman, M. G., Bridgend, Berwick
1858 Cruickshank, Amos, Sittyton, Aberdeen
1868 Cruickshank, Andrew, Conland, Huntly
1878 Cruickshank, David, Meft, Elgin
1868 Cruickshank, Edward C., Lethenty, Inverurie
1874 Cruickshank, George, Ardmore, Tain
1852 Cruickshank, George, Comisty, Huntly
1876 Cruickshank, James, Ladysford, Fraserburgh
1852 Cruickshank, John, Elgin
1875 Cruickshank, John, Dandaleith, Craigellachie
1876 Cruickshank, John W., Elrick House, Summerhill, Aberdeen
1876 Cruickshank, Wm., Woodhead, Cairness, Lonmay, Aberdeen
1865 Crum, Alex., Thornliebank House, M.P., Thornliebank, Glasgow
1876 Cullen, Archibald, Woodend, Airdrie
1881 Cullen, William, Barbeggs, Croy, Glasgow
1879 Cumming, David, Knockieston, Crieff
1868 Cumming, George, Writer, Banff
1865 Cumming, H. Gordon, Pittyvaich, Dufftown
1874 Cumming, Jas., Allanfearn, Inverness
1876 Cumming, William, V.S., Alnwick
1874 CUMMING, Sir William G. Gordon, of Altyre, Bart., Forres
1850 Cuninghame, D., Chapelton, Ardrossan
1880 Cuninghame, J. C., of Craigends, Johnstone
1866 Cuninghame, R. D. B., of Hensol, Castle Douglas
1880 CUNINGHAME, Sir William M., of Corsehill, Bart., Glenmoor House, Maybole
1854 Cunningham, A. G., Rosebank, Currie
1870 Cunningham, C., V.S., Slateford
1872 Cunningham, C. J., of Muirhouselaw, The Tofts, Morebattle, Kelso
1879 Cunningham, David, Burntisland
1864 Cunningham, J., Tarbreoch, Dalbeattie
1864 Cunningham, J. C., 102 West Bow. Edinburgh
1879 Cunningham, James William Brodie, Grahamslaw, Kelso
1867 Cunningham, John, Trees, Maybole

Admitted
1879 Cunningham, John, Burntisland
1857 Cunningam, J., Whitecairn, Dalbeattie
1864 Cunningham, J.M., Manager, Clydesdale Banking Company, Glasgow
1882 Cunningham, Thomas Dick Smith, Auchlochan, Lesmahagow
1836 Cunningham, W. A., of Logan, Cumnock
1859 Cunningham, W. C. S., of Caprington, Kilmarnock
1877 CUNNYNGHAM, Sir Robert K. A. Dick, of Prestonfield, Bart., Edinburgh
1871 Curr, Henry, Pitkellony House, Muthill
1880 Curr, James, Empingham, Stamford
1853 Currie, James, Eastwood, Gorebridge
1872 Currie, James J., Blinkbonny, Birtle, Manitoba
1879 Currie, John, Kirkeoch, Kirkcudbright
1882 Currie, Peter, Hotelkeeper, Tyndrum
1863 Currie, William, of Linthill, St Boswells
1877 Curror, Adam Henry, Studio, Sherman Block, St Paul's, Minnesota, U.S.A.
1867 Curror, David, of Wester Craigduckie, 25 Northumberland Street, Edinburgh
1848 Curror, John, of Nivingston, Inchdrewer, Colinton
1869 Curror, John F., Damhead, Murrayfield
1873 Curror, Patrick Robert, Myreside, Edinburgh
1872 Curror, Peter, late Coxithill, Stirling
1881 Curror, Peter, Maltster, Kirkcaldy

1874 Dahl, Ferdinand August, Director of the Royal Higher Agricultural School at Aas, Christiania—*Honorary Associate*
1881 Daish, John, 5 South St Andrew Street, Edinburgh
1876 Dakers, James, 24 Union Row, Aberdeen
1875 Dalgleish, George, Rosebery Mains, Temple
1857 Dalgleish, John J., of Ardnamurchan, 8 Athole Crescent, Edinburgh
1858 Dalgleish, L., of Pitfirrane, 22 Coates Crescent, Edinburgh
1879 Dalgleish, William Ogilvy, of Mayfield, Dundee
1876 DALHOUSIE, Right Hon. the Earl of, Brechin Castle, Brechin
1853†DALKEITH, Right Hon. the Earl of, K.T., Eildon Hall, Newtown St Boswells
1874 Dallas, A. G., 10 Tervor Terrace, London, S.W.
1882 Dallas, D. Forbes, S.S.C., 3 Queen Street, Edinburgh
1862 Dalrymple, Charles, of Newhailes, M P., 39E Onslow Square, London, S.W.
1868 Dalrymple, C. Elphinstone, of Kinellar Lodge, Blackburn, Aberdeen
1865 DALRYMPLE, Hon. G. Grey, Elliston House, St Boswells
1841 DALRYMPLE, Sir Hew, of North Berwick, Bart., Luchie, North Berwick
1857 Dalrymple, James, of Woodhead, Kirkintilloch
1866 DALYELL, Sir R. A. O., of Binns, Bart.
1878 Dalziel, Adam, Arkland, Penpont
1860 Dalziel, Alex., Glenwharrie, Sanquhar
1860 Dalziel, George, Merkland, Thornhill
1870 Dalziel, George, Auchengruith, Sanquhar
1873 Dalziel, George, W.S., 25 Drumsheugh Gardens, Edinburgh
1869 Dalziel, James, Grove Hill, Thornhill
1878 Dalziel, Robert, Druidhall, Penpont
1875 Dangerfield, Edward, late Balboughty, Perth

Admitted
1857 Darling, Adam, Governor's House, Berwick
1883 Darling, John F. Stormonth, Bank of Scotland, Edinburgh
1880 Darling, Thomas, Governor's House, Berwick
1865 Darroch, D., of Gourock, Torridon, Achnasheen
1855 Davidson, Alexander, Mains of Cairnbrogie, Old Meldrum
1881 Davidson, Donald, Drummond Park, Inverness
1864 Davidson, Duncan H. C. R., of Tulloch, Dingwall
1860 Davidson, George, Walton, Linlithgow
1880 Davidson, George, Banchory, Kinghorn
1879 Davidson, Gilbert, Banker, Hawick
1848 Davidson, H., of Muirhouse, Davidson's Mains, Edinburgh
1841 Davidson, Henry M., Sheriff-Clerk, Haddington
1870 Davidson, Hugh, of Braedale, Lanark
1883 Davidson, Hugh, of Cantray, Fort George Station
1864 Davidson, J., Harestone, Banchory
1877 Davidson, James J., Dean Park, Balerno
1865 Davidson, Robert, 29 Academy Street, Inverness
1883 Davidson, Samuel, Factor, Guisachan, Beauly
1872 Davidson, Wm., Colmslie, Galashiels
1850 Davidson, William J., of Ruchill, 32 Drumsheugh Gardens, Edinburgh
1848 DAVIE, Sir H. R. F., of Creedy, Bart., Crediton, Devon
1859 Dawson, John, Lymore, Montgomery, N. Wales
1881 Dawson, John Muirhead, Elcho House, Balfron
1876 Dawson, William, Westerton, Fochabers
1878 Dayton, Robert, The Hotel, Lochearnhead
1876 Dean, George, Brangan, Boyndie, Portsoy
1857 Deans, J. Y., of Kirkstyle, Kilmarnock
1850 Deans, Peter D., Mount Charles, Portobello
1878 Deans, William, The Glen, Innerleithen
1838 DEAS, Hon. Lord, 32 Heriot Row, Edinburgh
1823 Dempster, G., Ormiston Hall, Tranent
1854 Denholm, Alex., Baitlaws, Lamington
1877 DENMAN, Right Hon. Lord, Alderston, Haddington
1850 Dennistoun, Alexander H., of Golfhill, Glasgow
1877 Dennistoun, James Wallis, of Dennistoun, Harewood Glen, Selkirk
1864 Dewar, A., Arnprior, Kippen, Stirling
1882 Dewar, Alexander, Bethlen, Cluny, Aberdeen
1872 Dewar, David, Shaw of Touch, Stirling
1873 Dewar, James, Cairnston, Dunblane
1872 Dewar, James, 40 Windsor Terrace, St George's Road, Glasgow
1877 Dewar, James Cumming, of Vogrie, Ford
1873 Dewar, John, Doune Castle Farm, Doune
1864 Dewar, Peter, King's Park, Stirling
1864 Dewhurst, G. C., of Aberuchil, Comrie
1856 Dick, Dr John, 19 Dalrymple Crescent, Edinburgh
1868 Dick, Wm., of Tullymet, Ballinluig
1882 Dickenson, Robert, Longcroft, Lauder
1859 Dickenson, Wm., Longcroft, Lauder
1869 Dickie, Joseph, Union Bank, Dunkeld
1867 Dickie, Robt., Killeonan, Campbeltown
1869 Dickinson, George T., of Wheelbirks, Newcastle-on-Tyne

Admitted
1870 Dickson, Alex., of Hartree and Kilbucho, M.D., Professor of Botany, University of Edinburgh, 11 Royal Circus
1854 Dickson, Archibald, Hassendeanburn, Hawick
1850 Dickson, James J., C.A., 13 Clarendon Crescent, Edinburgh
1858 Dickson, James A., Woodville, Arbroath
1862 Dickson, J. H., Dabton, Thornhill
1846 Dickson, John, W.S., Greenbank, Perth
1858 Dickson, John F., Panbride House, Carnoustie
1876 Dickson, Patrick, Laurencekirk
1870 Dickson, R. A., Merchant, Dumfries
1860 Dickson, T., Drumcruilton, Thornhill
1879 Dickson, Thomas Goldie, 3 North St David Street, Edinburgh
1874 Dickson, W. L., Drummelzier Haugh, Biggar
1878 Dickson, William Traquair, W.S., 11 Hill Street, Edinburgh
1851 Dingwall, William, Ramornie, Ladybank
1863 Dinning, John, The Terrace, Belford, Northumberland
1849 Dixon, Thomas G., Nant Hall, Rhyl
1866 Dobbie, John, Campend, Dalkeith
1878 Dobie, David, Banker, Lockerbie
1878 Dobie, Douglas, Drumcork, Thornhill
1863 Dodd, Nicholas, Nisbet, Kelso
1863 Dodd, James, Mossburnford, Jedburgh
1857 Doddrell, George J., 51 Belmont Terrace, Hillhead, Glasgow
1865 Dodds, James, Moncrieff Bank, Perth
1877 Dodds, Samuel, Sommerfield, Haddington
1863 Dodds, William, Elwarthlaw, Greenlaw
1871 Doe, John, Agricultural Implement Maker, Errol
1880 Dollar, Thomas A., 56 New Bond Street, London
1858 Don, Alex., Keirsbeath, Dunfermline
1877 Donald, Andrew, Spittal, Penicuik
1858 Donald, Jas., Deebank Cottage, Crathes
1877 Donald, John, 49 Forrest Road, Edinburgh
1876 Donaldson, Alex., V.S., 54 Avenue Wagram, Paris
1871 Donne, Henry, Leek Wootten, Warwick
1865 Dougall, Adam, Stewarton, Kirkinner
1865 Dougall, Andrew, Railway Manager, Inverness
1857 Dougall, Admiral W. H. Maitland, R.N., of Scotscraig, Tayport
1868 Douglas, Archibald C., of Mains, Milngavie
1868 Douglas, Arthur Henry Johnstone, of Lockerbie, Glen Stuart, Annan
1858 Douglas, Bentlem, Peffer Mill, Liberton
1866 Douglas, E. O., of Killiechassie, Aberfeldy
1839 Douglas, F. B., Advocate, 21 Moray Place, Edinburgh
1851 DOUGLAS, Sir Geo. H. S., of Springwood Park, Bart., Kelso
1871 Douglas, George, Upper Hindhope, Jedburgh
1867 Douglas, G. S., 5 Abbotsford Grove, Kelso
1883 DOUGLAS, Sir John, K.C.B., of Glenfinart, Greenock
1882 Douglas, John, Argyll Arms Hotel, Campbeltown
1873 Douglas, John, Marionburgh, Ballindalloch
1861 Douglas, Thomas, Mains of Rhynie, Fearn, Ross-shire
1872 Douglas, Thos., Swinside Townhead, Jedburgh

Admitted
1874 Douglas, William, Arboll, Fearn
1878 Douglas, William D. Robinson, of Orchardton, Castle-Douglas
1854 Douglass, Alex. Forbes, Haddo House Mains, Aberdeen
1864 Douie, John R. L., Factor, Polmaise, Stirling
1879 Dow, David, Balmanno, Bridge of Earn
1879 Dow, David, jun., Balmanno, Bridge of Earn
1879 Dow, James, Clathybeg, Gask, Auchterarder
1883 Dowall, J. P., Kelly Bleachfield, Wormyhills, Arbroath
1858 Dowell, Alex., 13 Palmerston Place, Edinburgh
1873 Downie, George, Balcomie, Crail
1869 Downie, Hay, Corstorphine
1867 Downie, Wm., Kinbroom, Rothienorman
1857 Drennan, James, Auchinlee, Ayr
1872 Drever, James, Swannay House, Finstown, Orkney
1870 Drew, James, of Craigencallie, Doonhill, Newton-Stewart
1850 Drew, Lawrence, Merryton, Hamilton
1857 Drife, James, New Zealand
1861 Dron, William, Crieffvechter, Crieff
1861 DRUMMOND, Hon. Francis, 58 St George's Square, London, S.W.
1873 Drummond, James, jun., Blacklaw, Dunfermline
1859 Drummond, Henry, Seedsman, Stirling
1864 Drummond, John, of Balquhandy, late Guilton Rectory, Wingham, Kent
1871 Drummond, John, of Blackruthven, Perth
1852 Drummond, J. M., of Megginch, Errol
1875 Drummond, Robert, Pocknave, Craigie, Kilmarnock
1828 Drummond, Thomas, of Craigie, Dundee
1858 Drybrough, Thos., 31 Royal Terrace, Edinburgh
1869 Dryburgh, J., Kininmonth, Cupar Fife
1863 Dryden, W., Land-Steward, Springwood Park, Kelso
1881 Drysdale, A. L., Dalmeny Park, Edinburgh
1873 Drysdale, David, Lorns Hill, Alloa
1864 Drysdale, Henry, Begbie, Haddington
1873 Drysdale, Robert, Old Mills, Craigforth, Stirling
1861 Drysdale, Wm., of Kilrie, North Pitteadie, Kinghorn
1870 Dudgeon, Alex., East Dalmeny, Edinburgh
1869 Dudgeon, George, Almondhill, Kirkliston
1850 Dudgeon, James, Upper Keith
1840 Dudgeon, John, 37½ Chalmers Street, Edinburgh
1862 Dudgeon, J. S., Longnewton, St. Boswells
1856 Dudgeon, John B., Crakaig, Golspie
1851 Dudgeon, Patrick, of Cargen, Dumfries
1877 Dudgeon, Robert F., yr. of Cargen Dumfries
1843 DUDLEY, Right Hon. the Earl of, Dudley House, Park Lane, London
1866 DUFF, Hon. George Skene, Montcoffer House, Banff
1874 Duff, George Smyttan, Heatherley, Inverness
1868 Duff, Col. James, Knockleith, Turriff
1875 Duff, James, Factor, Blackwood, Lesmahagow
1865 Duff, James, Freeland, Bridge of Earn

Admitted
1858 Duff, Lachlan Duff Gordon, of Drummuir, Keith
1866 Duff, Robert W., of Fetteresso, M.P., Stonehaven
1874 Duff, Thomas, of Aberlour, Craigellachie
1880 Duff, Thomas Gordon, Park House, Banff
1858 Duguid, P., of Cammachmore, Aberdeen
1881 Duke, William, Newbarns, Kirriemuir
1880 Dun, Finlay, 2 Portland Place, London, W.
1871 Dun, John, jun., Galashiels
1839 DUNBAR, Sir Archd., of Northfield, Bart., Duffus House, Elgin
1876 Dunbar, Garden Duff, of Hempriggs, Ackergill Tower, Wick
1845 DUNBAR, Sir William, of Mochrum, Bart., 35 Princes Gardens, London, S.W.
1876 Dunbar, William, Union Bank, Turriff
1851 Duncan, Alex. (of Providence, Rhode Island), Knossington Grange, Oakham, Rutland
1857 Duncan, Alex., Craigfoodie, Cupar Fife
1878 Duncan, Alex., Duart, Auchnacraig, Mull
1875 Duncan, Alex. R., yr. of Parkhill, Blairquosh, Strathblane
1876 Duncan, Charles, Advocate, Deebank, Murtle, Aberdeen
1872 Duncan, Charles, of Meadowcap, Woodend, Rothesay
1858 Duncan, D. H., Friock Mains, Arbroath
1882 Duncan, Hugh, Langalchorad, Rothesay
1881 Duncan, James, yr. of Auchendavie, Kirkintilloch
1868 Duncan, James, New Zealand
1869 Duncan, James, Panlathie Mill, Carnoustie
1871 Duncan, James, of Benmore, Kilmun, Greenock
1875 Duncan, James, Bannatyne Mains, Rothesay
1883 Duncan, Jas. Dalrymple, Writer, 211 Hope Street, Glasgow
1871 Duncan, John, yr. of Kinkell, Brownhills, St Andrews
1879 Duncan, John, of Dullatur, Newbigging, Carnock, Dunfermline
1858 Duncan, John, Ardo, Methlick
1881 Duncan, John, Auchenbee, Croy
1877 Duncan, John, Fortrie, King Edward, Banff
1882 Duncan, John W., Boghall, Kingsbarns, Fifeshire
1877 Duncan, Patrick, Balchers, King Edward, Banff
1879 Duncan, Patrick Geekie, East Memus, Kirriemuir
1855 Duncan, Robert, of Kirkmay, Crail
1868 Duncan, R., Auchenbaldie Mains, Banff
1882 Duncan, Robert, Brockwellmuir, Dunlop, Ayrshire
1881 Duncan, Robert, Royal Hotel, Tigh-na-bruaich
1881 Duncan, Thomas, Dullatur, Cumbernauld
1848 Duncan, William, S.S.C., 13 Abercromby Place, Edinburgh
1876 Duncan, William, 18 York Place, Edinburgh
1881 Duncan, Walter Geekie, Balkemback, Tealing, Dundee
1868 Duncan, W. J., 29 Abercromby Place, Edinburgh
1876 Dundas, Chas. Henry, Dunira, Crieff
1882 Dundas, Commander Colin M., of Ochtertyre, R.N., Stirling
1882 Dundas, David, Advocate, 46 Heriot Row, Edinburgh

Admitted
1878 Dundas, Ralph, W.S., 16 St Andrew Square, Edinburgh
1847 Dundas, Robert, of Arniston, Gorebridge
1880 Dundas, T. G., of Carron Hall, Larbert
1880 Dundas, Wm. John, C.S., 16 St Andrew Square, Edinburgh
1857 Dunlop, Alexander, Glasgow
1876 Dunlop, Colin Robert, of Quarter, Hamilton
1869 Dunlop, Gabriel, Castle Farm, Stewarton
1872 Dunlop, George, W.S., 14 George Street, Edinburgh
1875 Dunlop, Quintin, Morriston, Maybole
1871 Dunlop, Robert, Aulton, Kilmaurs
1853 Dunlop, Wm. H., of Annanhill, Kilmarnock
1862†DUNMORE, Right Hon. the Earl of, Dunmore Park, Stirling
1854 Dunn, Adam, late Tranent Mains, Tranent
1880 Dunn, Andrew, jun., Kelso
1863 Dunn, David, 76 Liverpool Road, Birkdale, Southport
1876 Dunn, John, Ramsay Lodge, Kelso
1877 Dunn, Malcolm, The Gardens, Dalkeith
1880 Dunn, Robert, Belford
1878 Dunn, Wm., Kenmore Mains, Aberfeldy
1858 Durie, David, Nether Mill, Fettercairn
1855 Durie, Robert Hogg, Barney Mains, Haddington
1879 Durno, James, Jackston, Rothienorman
1868 Durno, John, Lambhill, Insch
1874 Durno, John, Sunnyside, Rothienorman
1880 Durward, John, Luib, Corgarff, Strathdon
1868 Duthie, William, Banker, Tarves
1881 Dyer, Matthew, Wood Merchant, Peebles
1878 Dykes, James, Cuicken, Penicuik
1869 Dykes, John, jun., 79 St Vincent Street, Glasgow
1832 Dyson, Thos. C., of Willowfield, Halifax, Yorkshire

1871 Easson, David, Camperdown, Dundee
1860 Easson, Robt., Scones Lethendy, Perth
1865 Eden, Right Rev. Bishop, Primus, Eden Court, Inverness
1871 Eden, Henley, Maiden Bradley, Bath
1874 Edgar, John, Kirkettle, Roslin
1871 Edgly, Robert, Gilmerton, Edinburgh
1857 Edgly, Thomas, Gilmerton, Edinburgh
1864 Edington, Peter, Thornhill, Muthill
1879 Edmond, David, of Ballochruin, Balfron
1877 Edmond, Alex., yr. of Kingswells, Garthdee, Aberdeen
1881 Edmond, John, Gallamuir, Bannockburn
1873 Edmond, Wm., Cowie, Bannockburn
1873 Edmond, William, Hillhead of Catter, Drymen
1858 Edmonds, Leonard, London
1878 Edmonston, Thomas, Sackville Street, Portland Street, Manchester
1869 Edmonston, D. C., Ordale, Baltasound, Unst, Lerwick
1875 Edmonston, Mrs, of Buness, Lerwick
1873 EDMONSTONE, Admiral Sir William, of Duntreath, Bart., Strathblane
1859 Edwards, Matthew, late Hilton, Alloa
1863 EGLINTON and WINTON, Right Hon. the Earl of, Eglinton Castle, Irvine
1881 Elder, Hugh, Grain Merchant, Dunfermline
1881 Elder, Hugh, East Bearford, Haddington
1854 Elder, Jas., Whitehill Mains, Musselburgh

Admitted
1877 Elder, James, Roddinglaw, Currie
1854 Elder, Thomas, Wedderburn Mains, Edrom
1854 Elder, William, Tweedmouth Implement Works, Berwick-on-Tweed
1873 Eley, Rev. Dr Wm. Henry, Etchingham Rectory, Hawkhurst, Kent—*Free Life Member*
1875 ELGIN and KINCARDINE, Right Hon. the Earl of, Broomhall, Dunfermline
1874 ELIBANK, Right Hon. Lord, Darnhall, Eddleston
1875 ELLESMERE, Right Hon. the Earl of, Worsley Hall, Manchester
1869 Elliot, A. T., Newhall, Galashiels
1853 Elliot, James, Galalaw, Kelso
1880 Elliot, James, Burnhead, Hawick
1875 Elliot, James T. S., younger of Wolfelee, Hawick
1854 Elliot, John, Primrosehill, Duns
1880 Elliot, John, of Binks, Burnmouth, Newcastleton
1863 Elliot, John, The Flat, Newcastleton
1874 Elliot, Matthew, Flesher, Inverness
1848 Elliot, Robert, East Nisbet, Jedburgh
1874 Elliot, Robert Henry, of Clifton Park, Kelso
1852 Elliot, Thomas, Hindhope, Jedburgh
1854 Elliot, Thomas, Blackhaugh, Galashiels
1873 Elliot, Thos. John, Bridge House, Southwick, Fareham, Hants—*Free Life Member*
1861 ELLIOT, Sir Walter, of Wolfelee, K.C.S.I., Hawick
1860 Elliot, Walter, Hollybush, Galashiels
1866 Elliot, Walter, Hermitage, Newcastleton
1872 Elliot, Wm. B., of Benrig, St Boswells
1880 Ellis, O. W., (Robey & Co.), 26 George Street, Edinburgh
1871 Ellison, Ralph Carr, of Dunstan Hill, Gateshead
1869 ELPHINSTONE, Right Hon. Lord, Carberry Tower, Musselburgh
1867 ELPHINSTONE, Hon. Edward Chas. Buller, Carnock House, Larbert
1840 ELPHINSTONE, Sir James D. H., of Horn and Logie Elphinstone, Bart., Pitcaple
1882 Ensor, Thos. Henry, 54 South Street, Dorchester—*Free Life Member*
1878 Erskine, Charles, Chiefswood, Melrose
1874 Erskine, Henry, care of Wm. Kinnear, North Water Bridge, Laurencekirk—*Free Life Member*
1862 Erskine, H. D., of Cardross, Stirling
1862 Erskine, J. E., of Linlathen, Broughty-Ferry
1859 Erskine, Vice-Admiral John E., The Albany, London
1860 ERSKINE, Sir Thomas, of Cambo, Bart., St Andrews
1882 Esson, Robert, Ballindalloch
1875 Ewart, H., Tynninghame, Prestonkirk
1858 Ewen, Robert, West Town, Tarland
1857 Ewing, Alex. Crum, of Keppoch, Cardross
1851 Ewing, Archd. Orr, of Ballikinrain, M.P., Killearn
1882 Ewing, Archd. Ernest Orr, Cardross House, Port of Monteith.
1857 Ewing, Humphrey Ewing Crum, of Strathleven, Ardencaple Castle, Helensburgh

1868 Fair, Frederick, late St Andrews
1863 Fair, John S. Elliot, Wells, Jedburgh
1864 Fairholme, Geo. K. Erskine, of Old Melrose

Admitted
1858 Falconar, Donald, Milton of Conon, Arbroath
1873 Falconer, Wm., Cairnton, Fordoun
1849 FALSHAW, Sir James, Bart., 14 Belgrave Crescent, Edinburgh
1860 Farish, Samuel, Kirkland, Lockerbie
1877 Farish, Samuel T., jun., Kirkland, Lockerbie
1877 Farish, Wm. R., Tinwald Parks, Dumfries
1852 Farquhar, Arthur, W.S., 10 Forrest Road, Aberdeen
1876 Farquhar, Captain, of Glenesk, Turriff
1880 Farquhar, James, Old Echt, Echt
1865 Farquharson, Colonel James Ross, of Invercauld, Braemar
1865 Farquharson, J., 4 Bridge Street, Aberdeen
1852 Farquharson, James, of Glenfarquhar, Auchenblae
1871 Farquharson, James, East Town, Tarland
1843 Farquharson, Major-General Francis
1857 Farquharson, Robert O., of Haughton, Alford
1858 Farrell, Alfred Herbert William, Davo House, Fordoun
1874 Fell, John Duncan, Flesher, Blairgowrie
1863 Fender, Robert, Northfield, Coldingham
1877 Fennessy, Thos., Grange Villa, Waterford, Ireland
1871 Fenwick, James, Factor, Redgorton, Perth
1874 Fergus, William (Craigour, Liberton), 1 Queen's Place, Leith Walk, Edinburgh
1882 Ferguson, Alexander Robertson, Writer, Neilston
1876 Ferguson, Archd. A., 198 High Street, Portobello—*Free Life Member*
1871 Ferguson, Lieut.-Col. George A., of Pitfour, Mintlaw
1879 Ferguson, James, Balunie, Coupar-Angus
1875 Ferguson, John, Banker, Carnwath
1882 Ferguson, John, Bornish, South Uist, Lochmaddy
1863 Ferguson, John, Burghlee, Loanhead
1855 Ferguson, John, Lossiemouth
1882 Ferguson, J., Duns Castle Estate Office, Duns
1846 Ferguson, J., of Kilquhanity, Dalbeattie
1870 Ferguson, John, Seed Merchant, Sanquhar
1879 Ferguson, John, Kipperoch, Dumbarton
1875 Ferguson, Peter, Rock Cottage, Renfrew
1882 Ferguson, Ronald C. Munro, of Raith and Novar, Raith House, Kirkcaldy
1858 Ferguson, Thomas, Kinnochtry, Coupar-Angus
1868 Ferguson, Thomas, Union Street, Aberdeen
1870 Ferguson, Wm., of Kinmundy, 21 Manor Place, Edinburgh
1879 Ferguson, W. S., Pictston Hill, Perth
1879 Fergusson, Donald, Dalcapon, Ballinluig, Perthshire
1854 FERGUSSON, Right Hon. Sir James of Kilkerran, Bart., Maybole
1882 Fergusson, Sir James Ranken, of Spitalhaugh, Bart., West Linton
1878 Fergusson, Ninian, Sanquhar
1836 Fergusson, Samuel R., of Middlehaugh, Pitlochry
1878 Fergusson, Wm., Donkins, Ecclefechan
1870 Ferme, Charles, late Blackhall, Tulliallan Kincardine-on-Forth

Admitted
1869 Ferme, George, Leigham Lodge, Roupell Park, Streatham Hill, Surrey
1875 Fernie, James A., Hilton, Alloa
1853 Fernie, J. C., Union Club, St Andrews
1864 Field, Rev. Edward Burch, of Moreland, 12 Douglas Crescent, Edinburgh
1869 Field, Sydney, Scotstoun House, Aberdeen
1879 Findlater, James Smith, Balvenie, Dufftown
1857 Findlay, Colonel John, Woodbank, Alexandria, N.B.
1855 Findlay, Robert, of Springhill, Baillieston, Glasgow
1880 Findlay, Robert Elmsall, of Boturich, Alexandria, N.B.
1847 Findlay, Thomas Dunlop, Easterhill, Glasgow
1857 Findlay, W., Brackenbrae, Bishopbriggs
1844 Finlay, A. S., of Castle Toward, Greenock
1859 Finlay, John, Lochend, Lochgelly
1869 Finlay, John H., W.S., 13 Castle Street, Edinburgh
1870 Finlay, Kirkman, of Dunlossit, Portaskaig, Islay
1882 Finlayson, John, Harperstone, Braco, Perthshire
1883 Finlayson, John, Throsk Tile Works, Stirling
1881 Finlayson, Matthew, Poppletrees, Stirling
1882 Finlayson, W., Kersie Mains, South Alloa
1874 Finnie, Wm., of Newfield, Kilmarnock
1873 Fisher, Donald, Jellyholm, Alloa
1861 Fisher, Donald, The Hotel, Pitlochry
1870 Fisher, John, Knells, Carlisle
1877 Fisken, Thomas Robert Hay, Delamere Villas, Dewsbury Road, Leeds
1861 Fleming, Alex., Raith, Bothwell
1882 Fleming, Andrew, Calla, Carnwath
1881 Fleming, Rev. A., of Inchyra, Hamilton House, Perth
1867 Fleming, David, Avonmill, Hamilton
1876 Fleming, David Gibson, Ardullie, Dingwall
1878 Fleming, Gavin, Crowdie Knowe, Ecclefechan
1868 Fleming, George, Crofthead, Mid-Calder
1881 Fleming, Hugh, Lower Ballaird, Balfron, Stirling
1882 Fleming, James, Muirside, Carmunnock
1854 Fleming, James, Three-Mile-Town, Linlithgow
1864 Fleming, James, Carmuirs, Falkirk
1882 Fleming, James S., Royal Bank of Scotland, Edinburgh
1877 Fleming, John, Ploughland, Strathaven
1865 Fleming, John, Bombay
1870 Fleming, John, Meadowbank Cottage, Strathaven
1875 Fleming, John, Woodside, Rutherglen
1876 Fleming, J. B., of Beaconfield, 241 St Vincent Street, Glasgow
1882 Fleming, William, Windlaw, Carmunnock
1857 Fletcher, Archibald, Auchtertyre, Tyndrum
1870 Fletcher, Bernard Jas. Cuddon (of Somerton Hall, Norfolk), Dunans, Colintraive, Argyllshire
1848 Fletcher, Major C. E., late of Corsock
1865 Fletcher, James, of Rosehaugh, Avoch
1857 Fletcher, J., of Salton, Tranent
1875 Fletcher, John, Bangour, Uphall
1872 Flint, Alex., Nether Mains, Chirnside
1869 Flint, David, Drylaw Mains, Davidson's Mains
1861 Flockhart, J., Banker, Colinsburgh

Admitted
1883 Flower, Chas. E., of Glencasslay, Avon bank, Stratford-on-Avon
1865 Foggo, Robert Gordon, Invercauld Office, Ballater
1872 FORBES, Right Hon. Lord, Castle Forbes, Keig
1876 Forbes, Alex., Pitfourie, Pitlochrie
1881 Forbes, Alexander M., 6 St Andrew Square, Edinburgh
1876 Forbes, Arthur Drummond, Millearne, Auchterarder
1856 Forbes, Charles William, late Moniack Castle, Inverness
1870 Forbes, Chas. W. L., Aberfeldy
1830 Forbes, George, Merchant, London
1865 Forbes, Duncan, of Culloden, Inverness
1862 Forbes, James Ochonar, of Corse, Lumphanan
1874 Forbes, James, Tombreck, Glenbucket, Aberdeen
1842 Forbes, Major-General John, of Inverernan, C.B., Strathdon
1872 Forbes, John, Pitellachie, Coldstone, Dinnet, Aberdeenshire
1880 Forbes, Thomas, Road Surveyor, Mid-Calder
1857 FORBES, Sir William, of Craigievar, Bart., Fintray House, Aberdeen
1835 Forbes, W., of Medwyn, 17 Ainslie Place, Edinburgh
1860 Forbes, William, of Callendar, Falkirk
1870 Forbes, W. F., of Lochcote, Bathgate
1878 Ford, George, Saughton Hall Mains, Murrayfield, Edinburgh
1849 Ford, Wm., Fenton Barns, Drem
1878 Ford, William, of Ferneyside, Liberton
1868 Fordyce, James Dingwall, of Culsh, Advocate, 34 Great King Street, Edinburgh
1871 Forgan, Andrew, 14 Claremont Terrace, Edinburgh
1873 Forgan, James, Sunnybraes, Leven
1831 Forman, Jn. Nairne, W.S., 8 Heriot Row, Edinburgh
1863 Forman, John (Duncrahill), 51 Great King Street, Edinburgh
1852 Forman, Robert, late Keith House, Upper Keith
1857 Forrest, David, of Treesbanks, Shotts
1880 Forrest, George, Edston, Stobo, Peebles
1843 Forrest, James, jun., Kirriemuir
1870 FORREST, Sir John, of Comiston, Bart., 18 Manor Place, Edinburgh
1867 Forrest, John Clark, of Auchenraith, Hamilton
1863 Forrest, Peter, of Hairmyres, Shotts
1863 Forrest, William, of Lawmuir, Hamilton
1882 Forrester, John, Builder, 39 Broughton Place, Edinburgh
1865 Forsyth, David, Town Clerk, Elgin
1872 Forsyth, Jas. (Hooper & Co.), Kelso
1874 Forsyth, Jas. Noel Muller, of Quinish, Tobermory, Mull
1878 Forsyth, John, Riffer Park, Sorbie
1855 Forsyth, John, Auchoyle, Parkhill
1878 Forsyth, Walter, Whitlee, Corslee, Stow
1874 Forsyth, William Banks, of the *Inverness Advertiser*, Inverness
1873 Fortescue, Archer, of Swanbister and Kingcausie, Aberdeen
1857 Fortune, George, Barnsmuir, Crail
1854 Fortune, William R., of Muircambus, Colinsburgh
1875 Foulds, A. R., of Clerkland, Stewarton
1877 Foulis, David, 61 George Street, Edinburgh
1869 FOULIS, Sir James Liston, of Colinton, Bart., St Andrews
1871 Foulis, Dr Robert, of Cairnie Lodge, Cupar, Fife

Admitted
1883 Fowler, J. A., yr. of Braemore, Inverbroom House, Garve, N.B.
1866 Fowler, Henry Mackenzie, of Raddery, Fortrose
1874 Fowler, William, of Asleed, Turriff
1849 Fox, Michael, jun., late Glencorse Mains, Penicuik
1838 Fox, Richard M., of Foxhall, Rathowen, Ireland
1870 Fox, Wm., The Abbey, St Bees
1881 Foyer, David, Knowhead, Campsie
1872 France, C. S., Balboughty, Perth
1867 France, Robert, Craigbank House, Causewayhead, Stirling
1874 Fraser, Alex., Commercial Bank, Provost of Inverness
1857 Fraser, Alexander, Solicitor, 22 Union Street, Inverness
1868 Fraser, Alex. (Neill & Co.), Canonmills Lodge, Edinburgh
1865 FRASER, Col. the Hon. A. E., Ellan Aigeas, Beauly
1820 Fraser, A. T. F., of Abertarff, Inverness
1883 Fraser, David, Dalneigh, Inverness
1840 Fraser, Evan Baillie, Redburn, Inverness
1869 Fraser, Fran. G., of Findrack, Torphins
1869 Fraser, Colonel Fred. Mackenzie, of Castle Fraser, Aberdeen
1873 Fraser, H. Newby, late Portkill, Kilcreggan
1853 Fraser, Hugh, Balloch of Culloden, Inverness
1856 Fraser, Hugh 29 Arundell Gardens, Kensington Park, London
1883 Fraser, Huntly, Kinmylies, Inverness
1874 Fraser, James, C.E., Inverness
1874 Fraser, James, Mauld, Beauly
1877 Fraser, James, 6A Bristo Place, Edinburgh
1840 Fraser, John, London
1865 Fraser, Capt. John, of Balnain, Farraline, Stratherrick, Inverness
1879 Fraser, John M. (Macdonald & Fraser), Perth
1854 Fraser, Patrick Allan, of Hospitalfield, Arbroath
1863 FRASER, Hon. Lord, 8 Moray Place, Edinburgh
1839 Fraser, Robert Brackla, Nairn
1850 Fraser, W. S., Banker, Dornoch
1852 Fraser, William, of Kilmuir and Newton, Nairn
1861 Fraser, Wm., Greenhill, Dunning
1865 Fraser, Wm., Annfield, Inverness
1859 Frazer, John, Overton, New Abbey, Dumfries
1857 Frederick D., of Gass, Dumbredden, Stranraer
1869 Frederick, Robert, Drumflower, Glenluce
1877 Frederick, Thomas, Cairnhandy, Stonykirk, Stranraer
1868 Freeland, Jas., Broadgate, Strathblane
1855 French, James, Sortkjeer, Fredrickshaven, Denmark
1877 French, James, Mountherrick, Abington
1867 Frew, Thomas, 6 Windsor Terrace, St George's Road, Glasgow
1854 Friar, Thomas, of Grindon Ridge, Norham-on-Tweed
1875 Frier, Matthew, Kidston Mill, Peebles
1873 Fryer, John J., Musicseller, Dumfries
1879 Fullarton, James, Balgove, Coupar-Angus
1857 Fulton, Andrew, 86 George Street, Edinburgh
1863 Fulton, William, Hatchetnize, Coldstream
1847 Fyfe, John, late of Dalmarnock, Glasgow

Admitted
1861 Fyfe, Robert, Pitconochie, Dunfermline
1875 Fyfe, William, Forfar
1879 Fyshe, James, junior, Easter Balbeggie, Kirkcaldy
1877 Fyshe, Peter, Wamphray, North Berwick

1868 Gairdner, Chas., Union Bank, Glasgow
1873 Galashan, Chas. C., Saddler, Alloa
1872 Galbraith, John, Edentaggart, Luss
1880 Galbraith, John, Croy Cunningham, Killearn
1873 Galbraith, Thos. L., Town Clerk, Stirling
1881 Galbraith, William W., Croftfoot, Gartcosh, Lanarkshire
1860†GALLOWAY, Right Hon. the Earl of, Galloway House, Garliestown
1874 Galloway, Alex., C.E., Tighnault, Aberfeldy
1861 Galloway, David, Cairnie, Glencarse
1879 Galloway, Peter, Loan of Errol, Errol
1859 Gamgee, John, late 1 Great Winchester Street Buildings, London, E.C.
1859 Garden, Arch., Grange Green, Forres
1882 Garden, James Murray, Advocate, Aberdeen
1874 Garden, Robert, North Ythsie, Tarves
1857 Garden, William, Parson's Pool, Bonnyrigg.
1864 Gardiner, P., Rottearns, Braco, Perthshire
1873 Gardiner, Patrick, Newbiggin, Auchterarder
1861 Gardiner, R., of Rottearns, Chapelbank, Auchterarder
1857 Gardner, George, Carrington Barns, Gorebridge
1870 Gardner, John, 4 Abbotsford Place, Glasgow
1880 Gardner, Peter, Dunmore Pottery, Stirling
1855 Gardner, Robert, Gattonside, Melrose
1855 Gardner, Robert, Whitburn
1873 Gardner, Wm., Cashley, Bucklyvie
1877 Gardner, Wm., East Langton, Mid-Calder
1867 Gardyne, Col. C. G., of Finavon, Forfar
1882 Garioch, Peter, 1 Stirling Street, Aberdeen
1825 Gartshore, John Murray, of Ravelston, Blackhall, Edinburgh
1864 Gartshore, John, Seedsman, Falkirk
1882 Garvie, Robert Glegg (Ben. Reid & Co.), Aberdeen
1854 Gatherer, George, Solicitor, Elgin
1859 Gaukroger, G., Southfield, Longniddry
1837 Geekie, Alex., of Baldowrie, Coupar-Angus
1873 Geekie, Peter, Barclay Hill, Perth
1861 Geekie, Peter M., Dollar
1871 Geekie, Robert, yr. of Baldowrie, Rosemount, Blairgowrie
1844 Geils, J. E., of Dumbuck
1877 Gell, H. Chandos Pole, Hopton Hall, Wirksworth
1875 Gemmell, Andrew, Lugtonridge, Beith
1875 Gemmell, Gilbert C., Upper Whitehaugh, Muirkirk
1875 Gemmell, John, late Wool Well, Roboro, Devon
1871 Gibb, David, Lagrannoch Cottage, Callander
1878 Gibb, John, Tarbrax, Carnwath
1878 Gibb, Robert Shirra, Boon, Lauder
1869 Gibbons, Thomas, 24 Cheswick Street, Carlisle
1849 GIBBS, Sir B. T. Brandreth, 13 Pelham Crescent, South Kensington, London, S.W.
1871 Gibson, Charles, Pitlochry
1875 Gibson, Francis, Woolmet, Dalkeith

Admitted
1876 Gibson, Henry John, Fornety, Foveran, Aberdeen
1871 Gibson, James, 34 Abbotsford Place, Glasgow
1876 Gibson, James, Glenstocking, Dalbeattie
1863 Gibson, James, 2 Chalmers Crescent, Edinburgh
1877 Gibson, James, Clifton Hall Mains, Ratho
1864 Gibson, J., Gunsgreen Hill, Ayton
1879 Gibson, John George, 11 Mincing Lane, London
1860 Gibson, J. T, Tullowquhairn, Kirkbean, Dumfries
1875 Gibson, John, Langskail, Rousay Orkney
1843 Gibson, Thomas, Haymount, Kelso
1869 Gibson, Thomas, Bainfield, Fountain Bridge, Edinburgh
1878 Gibson, Thomas, Sheriffyards, Clackmannan
1869 Gibsone, Lieut-General, of Pentland, Red Cross Lodge, Leamington
1873 Giglioli, Italo, Florence—*Free Life Member*
1865 Gilchrist, Dugald, of Ospisdale, Dornoch
1877 Gilchrist, Andrew, Carvennom, Anstruther
1876 Gilchrist, Andrew, Manager's Office, Powers Court, Enniskerry, C. Wicklow
1875 Gilchrist, William, late Knivocklaw, Loudoun
1842 Giles, James, Uplands, Guildford
1882 Gilkes, Robert, Canal Iron Works, Kendal
1875 Gill, John, Blingery, Wick
1871 Gillespie, Alex., Balmeadowside, Cupar
1841 Gillespie, David, of Mountquhannie, Cupar Fife
1882 Gillespie, Denholm, Waterhead of Dryfe, Lockerbie
1849 Gillespie, James, Craigie, Cramond
1860 Gillespie, James, Gateside, Douglas
1875 Gillespie, James, St Colmes, Ballinluig
1875 Gillespie, Jas. John, Parkhall, Douglas
1847 Gillespie, John, W.S., 53 Northumberland Street, Edinburgh
1873 Gillespie, Rev. John, Mouswald Manse, Dumfries
1875 Gillespie, John, Land Steward, Minard, Inveraray
1877 Gillespie, William C., Annanbank, Lockerbie
1877 Gillies, William, Writer, Pollokshaws
1848 Gillon, Colonel, of Wallhouse, Bathgate
1875 Gilmour, Alexander, Annfield House, Irvine
1849 Gilmour, Allan, of Eaglesham, Glasgow
1882 Gilmour, Arthur, Crosshill, East Kilbride
1881 Gilmour, Hugh, Home Farm, Balimore, Tigh-na-bruaich
1875 Gilmour, James, Orchardton, Cumnock
1872 Gilmour John, younger of Lundin, Montrave Kennoway
1863 Gilmour, John, of Mount Vernon, Row
1857 Gilmour, Matthew, Town of Inchinnan, Paisley
1881 Gilmour, William E., Woodbank, Alexandria, N.B.
1828 Gilmour, W. J. Little, of Craigmillar, New Club, Edinburgh
1882 Gilroy, James, Wholesale Potato and Manure Merchant, Berwick-on-Tweed
1855 Girdwood, Robert, Tanfield, Edinburgh
1876 Gladstone, John Robert, yr. of Fasque, Laurencekirk
1834 GLADSTONE, Sir Thomas, of Fasque, Bart.. Laurencekirk

Admitted
1853 Gladstone, Thomas Stewart, of Capenoch, Thornhill
1854†GLASGOW, Right Hon. the Earl of, Crawfurd Priory, Cupar Fife
1847 Glasgow, Alexander, of Old Court, Cork
1874 Glasgow, R. Bruce Robertson, of Montgreenan, Kilwinning
1857 Glegg, John, Factor, Milliken House, Johnstone
1873 Glen, James, late Rosebank, Luss
1872 Glen, James, Stronafyne, Arrochar
1847 Glen, John, late Merchant, Edinburgh
1860 Glen, Robert R., Banker, Linlithgow
1853 Glen, Thomas, Thornhill, Paisley
1869 Glendinning, Alex., Hatton Mains, Ratho
1873 Glendinning, Geo. P., Dalmeny Park, Edinburgh
1869 Glendinning, G. R., Hatton Mains, Ratho
1874 Glendinning, James P., Rawfarm, Mid-Calder
1848 Glendinning, Peter, Dalmeny Park, Edinburgh
1878 Gloag, Wm. Ellis, of Kincairney, 6 Heriot Row, Edinburgh
1859 Glover, Andrew, Lanrick Castle, Doune
1873 Goddard, H. R., Belsay, Newcastle-on-Tyne—*Free Life Member*
1877 Goff, Dr Bruce, Woodlea, Bothwell
1873 Gold, Joseph, Murthly Farm, Perth
1865 Goldie, R. G. M.. 3 Comely Green Place, Edinburgh
1874 Goodbrand, James H., Culnaha, Nigg, Ross-shire
1875 Gordon, Adam Hay, of Mayen and Avochie, Huntly
1876 Gordon, Alex. Morrison, of Newton, Insch, Aberdeen
1875 Gordon, Arthur Newton Forbes, of Rayne, Pitcaple
1866 Gordon, Chris., late Cannerie, Parton
1873 Gordon, Carlos Pedro, of Wardhouse, Insch, Aberdeenshire
1876 Gordon, Chas., of Hallmyre, Lamancha
1860 Gordon, George, Land Surveyor, Elgin
1875 Gordon, Graham, Middlecote House, Amport, Andover
1860 Gordon, Henry, Sheriff-Clerk, Moatbrae, Dumfries
1876 Gordon, Henry, of Manar, Inverurie
1868 Gordon, Henry Wolrige, of Hallhead, Esselmont, Ellon
1877 Gordon, James, Castle-Douglas
1874 Gordon, James A., of Arabella, Udale, Invergordon
1838 Gordon, John, of Aikenhead, Cathcart
1870 Gordon, John (late Culraven, Kirkcudbright), America
1871 Gordon, John, of Craigmyle, Torphins
1875 Gordon, John, Balmuchy, Fern
1881 Gordon, John P., of Cairnfield, Cairnfield House, Fochabers
1831 Gordon, John Taylor, Fairfield, Ayr
1876 Gordon, Peter G., Nevie, Glenlivet, Ballindalloch
1846 Gordon, Robert Macartney, of Rattra, Ellenbank, Kirkcudbright
1870 Gordon, Robert Wm., Only Grounds, Rugby
1863 Gordon, Thomas Dempster, late of Balmaghie, Castle-Douglas
1876 Gordon, William, Auchallater, Braemar
1879 GORDON, Sir William, of Earlston, Bart., Kirkcudbright
1876 Gossip, William, Park, New Machar
1866 Gough, Wm., Land Agent, Wykeham York
1871 Goulding, W., North Wall, Dublin

Admitted
1871 Gourlay, Robert Conning, Arbrack, Whithorn
1881 Gover, L. D., Findon, Worthing—*Free Life Member*
1860 Gowans, James, Rockville, Napier Road, Edinburgh
1868 Græme, Robert, of Garvock, Perthshire
1873 Graham, Alexander, Penicuik
1881 Graham, A. G. Maxtone, yr. of Cultoquhey, Perth
1879 Graham, Daniel Morgan, Auctioneer, Forfar
1869 Graham, George, Oakbank, Longtown
1881 Graham, George, jun., Easter Board, Gartshore, Croy
1855 Graham, H., Auckland, New Zealand
1827 Graham, James (formerly of Leitchtown), Toronto, Canada
1848 Graham, James Maxtone, of Cultoquhey, Perth
1851 Graham, James, Berklands, West Linton, Carlisle
1863 Graham, James, late of Southbar, Paisley
1864 Graham, James, Myothill, Denny
1852 Graham, John, of Shaw, Lockerbie
1865 Graham, Paul, Brooke's Club, St James Street, London
1873 Graham, Robert G., Burnfoot-on-Esk, Longtown
1882 Graham, Thomas, Glandhall, Chryston
1881 Graham, T. D. Cunningham, of Dunlop, Stewarton
1871 Graham, William, Easter Caputh, Dunkeld
1876 Graham, Wm., Wheatlands, Cramond Bridge
1869 Graham, Wm. C., Ellengall Villa, Blackheath, London
1833 Graham, W. Stirling, of Airth, Larbert
1873 Grahame, James, Western Club, Glasgow
1861 Granger, John, Pitcur, Coupar-Angus
1854 GRANT, Sir Archd., of Monymusk, Bart., Aberdeen
1872 Grant, A., Ardkinglas, Cairndow
1862 Grant, Charles, Hazelbrae, Glen Urquhart
1858 Grant, Francis William (Monymusk), 40 Pall Mall, London
1869 Grant, Captain Frederick G. Forsyth, of Ecclesgreig, Montrose
1876 Grant, George, Glenfarclass, Ballindalloch
1874 Grant, George, Pollo, Invergordon
1859 GRANT, Sir George Macpherson, of Ballindalloch, Bart., M.P., Ballindalloch
1876 Grant, George Smith, Auchorachan, Glenlivet, Ballindalloch
1828 Grant, Rev. James, D.C.L., D.D., 15 Palmerston Place, Edinburgh—*Chaplain to the Society*
1865 GRANT, Lieut.-Col. the Hon. James Ogilvie, of Grant, Mayne House, Elgin
1871 Grant, John, Inverlaidnan, Carr Bridge
1876 Grant, John, Banker, Methlick
1865 Grant, John, 57 South Guildry Street, Elgin
1879 Grant, John, Mains of Advie, Advie, Craigellachie
1879 Grant, John Sinclair, Tullymet, Ballinluig
1853 Grant, Kenneth, Dingwall
1862 GRANT, Lieut.-Gen. Sir Patrick, G.C.B., Chelsea Hospital
1841 Grant, Robert, of Druminnor, Rhynie
1842 Grant, Robert, Bookseller, 107 Princes Street, Edinburgh
1874 Grant, Major William, Drumbuie, Glen Urquhart, Inverness

Admitted
1862 Grant, William, Wester Alves, Forres
1874 Grant, Colonel W. L, Borgie House, Farr, Thurso
1883 Grant, William Ross, Solicitor, Inverness
1829 Grassick, John, 21 Ferryhill Place, Aberdeen
1878 Gray, Adam, jun., Ingleston of Borgue, Kirkcudbright
1859 Gray, Alex., Tanlawhill, Langholm
1873 Gray, Andrew, West Plean, Bannockburn
1880 Gray, C. W., of Carse Gray, Forfar
1879 Gray, E. A. Stuart, of Gray and Kinfauns, 19 Manor Place, Edinburgh
1880 Gray, George, of Bowerswell, Perth
1873 Gray, James, Birkenwood, Gargunnock
1861 Gray, James, Braehead Mains, Cramond
1868 Gray, James, Seedsman, Craigs, Stirling
1871 Gray, James, Kirkton of Collace, Balbeggie, Perth
1871 Gray, John, Merchant, Helensburgh
1876 Gray, John, 15 Exchange Square, Glasgow
1856 Gray, John, Engineer, Uddingston
1854 Gray, Patrick, Middle Strath, Falkirk
1878 Gray, Robert Smith, Southfield, Duddingston
1858 Gray, Thomas R., St Margaret's, Cheltenham
1882 Gray, Walter Wingate, of Nunraw, Haddington
1849 Gray, Wm., Southfield, Duddingston, Edinburgh
1855 Gray, Wm., Brownrigg, North Berwick
1874 Green, Robert, Ruthrie, Aberlour, Craigellachie
1857 Green, William Lynnburn, Aberlour. Craigellachie
1882 Greenshields, David, Land Steward, Garvald, Dolphinton
1867 Greenshields, James, West Town, Lesmahagow
1876 Greenshields, T. A., Windymains, Upper Keith
1854 Gregory, Alex. Allan, Corn Merchant, Inverness
1833 Gregory, Arthur Thomas, late of Buchromb, Dufftown
1875 Gregory, John, Westoe, South Shields
1871 Greig, David (John Fowler & Co.), Leeds
1868 Greig, George (Harvieston, Stonehaven), 1 India Buildings, Edinburgh
1870 Greig, J. A., Woodville, Dollar
1873 Greig, James Booth, Laurencekirk
1869 Greig, Peter M., 56 Inverleith Row, Edinburgh
1877 Greig, Robert M., Fountain House Works, Fountainbridge, Edinburgh
1852 Greig, Thomas, of Glencarse, Perth
1880 Greig, Thos. Crabb, Rephad, Stranraer
1861 Greig, T. Watson, Newton House, Glencarse, Perth
1854 Grey, Geo. A., Millfield Hill, Wooler
1881 Grier, W. F., 55 Bath Street, Glasgow
1880 GRIERSON, Sir A. D., of Lagg, Bart., Dumfries
1851 Grierson, J., Little Kirkland, Haugh of Urr, Dalbeattie
1859 Grierson, Joseph, Breoch, Castle-Douglas
1859 Grierson, Wm., Tors, Castle-Douglas
1872 Grieve, Archd., Albyrigg, Canonbie
1878 Grieve, Charles John, Branxholm Park, Hawick
1867 Grieve, D., Blackberry Hill, Whitburn
1878 Grieve, Gilbert, Minnydow, Kirkpatrick Durham, Dalbeattie

Admitted
1873 Grieve, James, Borthwickbrae Burnfoot, Hawick
1879 Grieve, James, Langlees, Torryburn
1858 Grieve, John, Castles, Dalmally
1869 Grieve, John, Balmoral Hotel, Princes Street, Edinburgh
1859 Grieve, Michael, Callander
1857 Grieve, Robert, Auch, Tyndrum
1857 Grieve, Robert, Edralaichdach, Trossachs, Callander
1861 Grieve, Walter, Cattleshiel, Duns
1871 Grimond, Alex. D., of Glenericht, Blairgowrie
1872 Guild, Andrew, Rhoders, Alva
1868 Guild, James, Balgone Barns, North Berwick
1875 Guild, Jas. Lyon, Abbey, North Berwick
1868 Guild, James Wyllie, C.A., Glasgow
1881 Guild, Thomas, Herdhill, Kirriemuir
1877 Gulland, William John, Monkton Hall, Musselburgh
1856 Gulston, Allan James, of Dirleton, Llangaddock, Carmarthenshire
1858 Gunn, Alexander, Dale, Halkirk, Thurso
1856 Gunn, Alexander, Dornoch
1882 Gunn, Alexander, V.S., Broadstone Hill Farm, Chipping Norton, Oxon
1839 Gunn, James, Sibster, Wick
1875 Gunn, Wm., Strathpeffer, Dingwall
1882 Guthrie, Charles M. L, yr. of Carnoustie, Corston, Coupar-Angus
1854 Guthrie, David, Banker, Stranraer
1857 Guthrie, Robert, Crossburn, Troon
1874 Gwyer, Cecil F., Murie House, Errol
1834 Gwynne, Alban Thomas James, of Monachty, Cardigan

1857†HADDINGTON, Right Hon. the Earl of, Tyninghame, Prestonkirk
1857 Haddon, Andrew, Honeyburn, Hawick
1830 Haddon, Walter, Solicitor, Hawick
1880 Haddon, P. M., St Mary's, Orton, Fochabers
1854 Hadwen, S., of Balblair, Bonar Bridge
1869 Hagart, James Valentine, W.S., 140 Princes Street, Edinburgh
1871 Haggart, Peter, Keltneyburn, Aberfeldy
1874 Haig, Archd. R., Quarryford, Gifford
1869 Haig, Hugh V., Cameron House, Windygates
1874 Haig, Jas. Richard, of Blairhill, Dollar
1869 Haig, W. H., Broomfield, Davidson's Mains, Edinburgh
1875 Haig, W. J., of Dollarfield, Dollar
1857 Haig, William (late North Street, St. Andrews), Australia
1861 Hain, David (late Drumrack, Crail), Canada
1871 Hain, Thomas, Cuplawhills, Leuchars, Fife
1870 Haining, J. J., Skipmyre, Lochmaben
1859 Haldane, R., Barlees, Cornhill-on-Tweed
1864 Halkett, James, Auchentender, Insch
1864 Halkett, Lieut.-Col. John Craigie, of Cramond, Edinburgh
1876 Hall, Alexander H., Campfield, Banchory
1873 Hall, Allan, Ardmaddy, Easdale, Oban
1855 Hall, Andrew, of Calrossie, Nigg, Ross-shire
1878 Hall, Sir Basil F., of Dunglass, Bart., Cockburnspath
1874 Hall, George Ross, Invergordon
1868 Hall, James, 33 Frederick Street, Aberdeen
1875 Hall, James M., of Tangy and Killean, Killean House, Tayinloan
1874 Hall, John, Tomich, Invergordon
1877 Hall, Robert, Felton, Dolphinton
1877 Hall, Wm,, Linton Cottage, Penicuik
1877 Hall, Thomas Farmer (Thomas Farmer & Co.), Dunster House, Mark Lane, London, E.C
1867 Hallen, J. H. B., L.R.C.S.E., Staff-Vet. Surgeon, H.M. Bombay Army
1868 Halley, George, New Mills, Culross
1870 Halley, John, Dornoch Mills, Crieff
1865 Halliday, Thomas, Rosehall Foundry, Haddington
1865†HAMILTON & BRANDON, His Grace the Duke of, K.T., Hamilton Palace, Hamilton
1881 Hamilton, Alexander, Commercial Bank, 63 Wallace Street, Stirling
1868 Hamilton, Claude Hamilton, Preston Hall, Dalkeith
1861 Hamilton, Daniel, 66 Hutchison Street, Glasgow
1875 Hamilton, Gavin, of Auldtown, Lesmahagow
1869 Hamilton, George, Ardendee, Kirkcudbright
1876 Hamilton, George, of Skene, Skene House, Skene, Aberdeen
1853 Hamilton, Hugh, of Pinmore, Girvan
1883 Hamilton, Jas., Bank Agent, Campbeltown
1865 Hamilton, James, Wallace Bank, Kilmarnock
1869 Hamilton, J. B. B. Baillie, of Arnprior Cambusmore, Callander
1869 Hamilton, James, Woolfords, Carnwath
1881 Hamilton, James A., of Whiteshawgate, Strathaven
1870 Hamilton, John, Conenish, Tyndrum
1839 Hamilton, Lieut.-Col. John, of Sundrum, Ayr
1872 Hamilton, John, Banker, Lesmahagow
1880 Hamilton, John Alex. (Hamilton and Crichton), 41 George Street, Edinburgh
1846 Hamilton, John Buchanan, of Leny, Callander
1857 Hamilton, John G. Carter, M.P., of Dalzell, Motherwell
1855 Hamilton, J. B. (late Burnhouse, Carnwath), London
1870 HAMILTON, Hon. R. B., Langton, Duns
1873 Hamilton, Robert, 29 St James Square, Edinburgh
1877 Hamilton, Thomas, Poniel, Douglas, Lanarkshire
1878 Hamilton, Thomas, Brick and Tile Manufacturer, Carluke
1864 Hamilton, Wm., of Cairns, Mid-Calder
1874 Hamilton, William Cameron, Baltasound, Unst
1859 Hamilton, Wm. F., Callander Park, Falkirk
1880 Hamilton, Wm. Sloan, Springside, Kilmarnock
1881 Hamilton, Zachray Macaulay, Symbister, Lerwick
1872 Handyside, J. B., Fenton, Drem
1843 Handyside, W., 11 Claremont Crescent, Edinburgh
1872 Hannan, J. D., Tayport Estates Office, Dundee
1858 Hannay, John, Gavenwood, Banff
1876 Hannay, Robert, Bournemouth, Torquay
1871 Hardie, Chas., late Primrose, Dunfermline
1870 Hardie, David, Priesthaugh, Hawick
1875 Hardie, Edmund W., Locher House, Bridge of Weir
1851 Hardie, George, Australia
1881 Hardie, James, 73 Nethergate, Dundee

Admitted
1878 Hardie, John, jun., Mull of Galloway, Stranraer
1861 Hardie, Robert, Kelso
1863 Hardie, W. H., late Bo'Mains, Linlithgow
1878 Hare, Lieut.-Col., Philpston House, Winchburgh
1880 Harkness, Walter Irvine, Shaws, Ettrick, Selkirk
1873 Harley, D., Hillwood Cottage, Ratho
1853 Harper, Frank, Torgorm, Dingwall
1876 Harper, Frank Vogan, Bridgend, Linlithgow
1880 Harper, John, Traquair, Innerleithen
1837 Harper, Joseph, Snawdon, Gifford
1871 Harper, William, Sheriffhall Mains, Dalkeith
1864 Harris, Richard H., Earnhill, Forres
1871 Harris, Wm., Innkeeper, Alyth
1837 Harris, Wm., Sun Wharf, Deptford, London, S.E.
1834 Harrison, Right Hon. George, Lord Provost of Edinburgh, 17 Whitehouse Terrace, Edinburgh
1880 Harrison, George H., 3 Warrender Park Road East, Edinburgh
1883 Harrison, James M. (Harrison & Brass, Coachbuilders), Inverness
1846 Harrop, I. Worthington, New Zealand
1881 Hart, Andrew, Mains of Aberdalgie, Perth
1873 Hart, William, Pothill, Auchterarder
1850 Harvey, Geo., Whittinghame Mains, Prestonkirk
1876 Harvey, George Thomson, Aberdeen Lime Co., Aberdeen
1854 Harvey, J. H., Pitgersie, Foveran, Ellon
1852 Harvie, Rev. W., of Brownlee, Carluke
1860 Hathorn, Lieut.-Col. John Fletcher, of Castlewigg, Whithorn
1875 Haughton, Wm. Hoghton, Factor, Craigowan, Kilmarnock
1875 Hay, Alexander, 4 Duke Street, Edinburgh
1834 Hay, Alex., Byres, Fochabers
1870 Hay, Alex. (Hay & Kyd), Easter Cultmalundie, Perth
1874 Hay, Alex. Penrose, Riverdale, Inverness
1862 Hay, Col. A. S. Leith, of Rannes, C.B., Leith Hall, Kennethmont
1865 Hay, C., Ardbeg, Islay, Greenock
1862 Hay, Colonel Drummond, of Seggieden, Perth
1841 Hay, Geo. W. (of Whiterigg), Sudbury
1862 Hay, Captain J. G. Baird, of Belton, Dunbar
1862 Hay, James, 28 Queen Street, Edinburgh
1858 Hay, James, jun., Little Ythsie, Tarves
1878 Hay, James Tonner, of Whitmuir, Selkirk
1878 Hay, James S., Clydesdale Bank, Falkirk
1878 Hay, J. F. D., yr of Park Place, Auchendoon, Newton-Stewart
1882 Hay, John Adam, yr. of Haystoun, Eshiels, Peebles
1848 HAY, Sir J. C. Dalrymple, of Park Place, Bart., M.P., Glenluce
1867 HAY, Sir Robert, of Haystoun, Bart., Kingsmeadows, Peebles
1869 Hay, Wm., 17 Hill Street, Edinburgh
1876 Hayman John, Dumfries House Mains, Cumnock
1872 Hazle, Alex., of Blackcraig, Drumburle House, Maybole
1876 Hector, A. Ed., 167 Crown Street, Aberdeen
1871 Heggie, Henry, Mains of Beath, Crossgates

Admitted
1871 Heggie, Robert B, West End House, Kirkcaldy
1871 Heiton, Andrew, of Darnick Tower, Perth
1869 Henderson, Adam, Grange, Dunfermline
837 Henderson, Alex., Longniddry
1847 Henderson, Alex., of Stemster, Thurso
1873 Henderson, A. W., Airthrey Paper Mills, Bridge of Allan
1874 Henderson, A. W., of Bilbster, Wick
1847 Henderson, C. J., 6 Drumsheugh Gardens, Edinburgh
1854 Henderson, David, of Abbotrule, Bonchester Bridge
1878 Henderson, G. D. Clayhills, Commander R.N., of Invergowrie, Dundee
1860 Henderson, George, Tarraughtie Cottages, Dumfries
1863 Henderson, Jas., Mintokaims, Hawick
1860 Henderson, Jas., Kelloside, Sanquhar
1839 Henderson, J., W.S., Banker, Thurso
1850 Henderson, John, Byres, Haddington
1876 Henderson, John (Courtestown of Leslie, Insch), 28 Frederick Street, Edinburgh
1877 Henderson, John, Longniddry
878 Henderson, John, East Elrington, Haydon Bridge—*Free Life Member*
1883 Henderson, Peter, Factor's Office, Beauly
1874 Henderson, Richard, The Grange, Kirkcudbright—*Free Life Member*
1858 Henderson, Robert, Nether Carsebridge, Alloa
1880 Henderson, Robert, East Gordon, Gordon, Berwickshire
1854 Henderson, Thos., 6 Saville Road, Edinburgh
1861 Henderson, W., Milltown, Coupar-Angus
1877 Henderson, Wm., of Redford, Linlithgow
1881 Henderson, Wm., East Elrington, Haydon Bridge—*Free Life Member*
1862 Hendrie, John, of Larbert, Stirlingshire
1865 Hendrie, John, Builder, Inverness
1882 Henry, Lieut.-Gen. Chas. Stuart, C.B., The Pavilion, Melrose
1874 Henry, John, S.S.C., 29 Rutland Square Edinburgh
1883 Henry, Matthew, Ankerville, Tain
1863 Hepburn, Jas, Preston Mains, Prestonkirk
1876 Hepburn, James, Spittal, Keithhall, Inverurie
1877 Hepburn, John, 66 High Street, Kinghorn
1879 Hepburn, Jn., Seedsman, Dunbar
1837 HEPBURN, Sir Thos. Buchan, of Smeaton, Bart., Prestonkirk
1881 Herbertson, Robert H., Fans, Earlston
1876 Herdman, Benjamin A., Falkland Wood, Falkland
1877 Herdman, George, late Fordel, Dalkeith
1878†HERRIES, Right Hon. Lord, Everingham Park, York
1853 Herries, Alexander Young, of Spottes, 16 Heriot Row, Edinburgh
1877 Herron, W, Town-Clerk, Renfrew
1883 Hetherington, R. B., Auction Mart, Earl Street, Carlisle
1857 Hewat, Richard, Writer, Castle-Douglas
1862 Hewetson, J., Auchenbainzie, Thornhill
1870 Hewetson, Joseph, Balterson, Newton-Stewart
1870 Hiddleston, John, Kilroy, Dalswinton, Dumfries
1863 Higgins, Robt., Ninewar, Prestonkirk

Admitted

1861 Hill, Alex., of Stonywynd, Boarhills, St Andrews
1873 Hill, Arthur James (Theodore Jones, Hill, & Co.), Accountant, 36 Lansdowne Road, London, W.—*Free Life Member*
1877 Hill, David, Upper Magus, St Andrews
1861 Hill, James, Braideston, Meigle
1850 Hill, John, Carlowrie, Cramond Bridge
1868 Hill, John, 12 Clarence Street, Edinburgh
1881 Hill, John, Langside, Kennoway
1851 Hill, Robt., Navidale House, Helmsdale
1874 Hill, Robert Robertson, Navidale House, Helmsdale
1863 Hilson, George, jun., Solicitor, Jedburgh
1882 Hislop, William, Coachbuilder, Edinburgh and Haddington
1862 Hobkirk, Jas., Broadhaugh, Hawick
1880 Hodge, John, Lochill, Mauchline
1877 Hodgson, John W., Burgh-by-Sands, Carlisle
1860 Hog, Thos. A., of Newliston, Kirkliston
1863 Hogarth, George, Warren, Salisbury
1842 Hogarth, George, Banker, Cupar Fife
1863 Hogg, Henry, Symington Mains, Stow
1876 Hogg, Robert, 17 Walmer Crescent, Glasgow
1859 Hogg, Robert, Rosemay, Leadburn
1854 Hogg, Thomas, Hope Park, Coldstream
1880 Hogg, Thomas, Lewnishope, Selkirk
1880 Hoggan, Andrew, jun., Busby Farms, Busby
1873 Holliday, Jonathan, Kirkbampton, Carlisle
1878 Holliday, Wm., Pelutho West House, Abbey Town, Carlisle
1878 Holliday, Wm., Plumbland, Aspatria, Carlisle
1882 Holm, Alexander, Balliemore, Kilmichael, Lochgilphead
1875 Holm, John, Jaapston, Neilston
1880 HOLMES, Hon. Matthew, Cintra, Dunedin, New Zealand
1879 Holmes, William, Fullarton Street, Irvine
1874 Holst, Christian, Chamberlain to His Majesty Oscar II., and Norwegian Court Paymaster—*Honorary Associate*
1860 HOME, Right Hon. the Earl of, The Hirsel, Coldstream
1836 Home, David Milne, of Milnegraden, Coldstream
1874 Home, David Milne, of Wedderburn, M.P., 38 Queensgate Terrace, London
1831 Home, G. H. M. Binning, of Argaty, Doune
1858 Hood, Archibald, Rosewell
1878 Hood, David A., Balgreddan, Kirkcudbright
1881 Hood, David M., Gedhall, Barry, Carnoustie
1857 Hood, James (late Newmains, Prestonkirk), Australia
1880 Hood, James, Cove, Cocksburnpath
1859 Hood, John, Townhead, Cocksburnpath
1875 Hood, Robert, of Sunnyside, M.D., 5 Salisbury Road, Edinburgh
1854 Hood, T., Coldstream Mains, Coldstream
1877 Hood, William, The Cove, Cocksburnpath
1878 Hope, Alex., Pinkie House, Musselburgh
1880 Hope, Alex., Cleveland Cottage, Middleton in Teesdale, Darlington
1879 Hope, Alex. P., Oxwell Mains, Dunbar
1878 HOPE, Sir John David, of Pinkie, Bart.

1877 HOPE, Hon. Charles, of Bridge Castle, Bathgate
1865 Hope, Henry W., of Luffness, Drem
1847 Hope, James, East Barns, Dunbar
1848 Hope, James, of Belmont, W.S., 42 Charlotte, Square, Edinburgh
1877 Hope, James Edward, Belmont, Murrayfield
1878 Hope, John Wilson, 10 Drumsheugh Place, Edinburgh
1859 Hope, William P., Leith
1878 Hope, William James, East Barns, Dunbar
1871 Horn, John, of Thomanaen, Milnathort
1864 Horncastle, Henry, Whitemoor, Ollerton, Newark
1881 Horne, Edward William, of Stirkoke, Caithness
1851 Horne, T. E. O., W.S., 19 Grosvenor Street, Edinburgh
1880 Horne, Thomas, jun., 19 Grosvenor Street, Edinburgh
1878 Hornsby, James (R. Hornsby & Sons), Spittalgate Ironworks, Grantham
1853 Hosack, William, Kilmaronag House, Oban
1877 Houldsworth, Arthur, Springfield House, Lasswade
1865 Houldsworth, Henry, Carrick House, Ayr
1868 Houldsworth, James, of Coltness, Wishaw
1865 Houldsworth, J. M., Ayr
1857 Houldsworth, Joseph Henry, Glasgow
1872 Houldsworth, Walter J., Coltness House, Wishaw
1857 Houldsworth, William, Glasgow
1878 Houston, John, Overlaw, Kirkcudbright
1878 Houston John, The Hill, Castle-Douglas
1875 Houstoun, George L., of Johnstone, Johnstone, Renfrewshire
1877 Houstoun, Michael Henry, of Beechhill, Haddington
1883 Houstoun, Captain J. F., of Clerkington, Haddington
1854 Houstoun. Wm., of Kintradwell Golspie
1859 Howard, James, M.P. (J. & F. Howard), Bedford
1865 Howatson, Charles, of Glenbuck, Lanark
1875 Howatson, John L., Ramsaycleuch, Selkirk
1876 Howatson, W. M. S., Carskeoch, Patna Ayrshire
1865 Howden, John, Inverness
1864 Howden, John, Overseer, Nether Braco Perthshire
1854 Howe, Alexander, W.S., 32 Charlotte Square, Edinburgh
1863 Howie, H. Brown, North Hazelrigg, Belford, Northumberland
1863 Howie, James, Haddon, Kelso
1857 Howie, John, Hurlford, Kilmarnock
1879 Howie, William, Finnochbog, Inverkip
1862 Hozier, W. W., of Newlands, Mauldslie Castle, Carluke
1853 Hubbach, Joseph, Liverpool
1865 Hudspith, Wm., Green Croft, Hartwhistle
1877 Hughan, Peter H., Cults, Whithorn
1872 Hughes, George P., of Middleton Hall, Wooler
1875 Hugonin, R., Kinmylies House, Inverness
1869 Hume, Archibald, of Auchendolly, Dalbeattie
1880 Hume, David, Barrelwell, Brechin
1871 Hume, George T., late Sunlawshill, Kelso

Admitted
1869 Hume, John, Balmirmer, Arbroath
1840 Hume, P. Hallyburton, Dunbar
1879 Hunt, Arthur E. Brooke (B.A., Trin. Col. Cam.), Peers Court, Dursley, Gloucestershire—*Free Life Member*
1859 Hunt, James Alex., of Pittencrieff, Logie, Dunfermline
1855 Hunter, Alex., Nethershiel, East Calder
1876 Hunter, Capt. Alexander C., of Tillery and Auchiries, Aberdeen
1867 Hunter, David, Guiltreehill, Maybole
1860 Hunter, Evan Alan, W.S., 121 Princes Street, Edinburgh
1861 Hunter, Herbt., late of Burnhead, Lockerbie
1876 Hunter, James, of Antonshill, Coldstream
1857 Hunter, James, Coplawhill, Strathbungo, Glasgow
1852 Hunter, James, of Glenapp, Newmains House, Newmains
1864 Hunter, John, Dipple, Fochabers
1875 Hunter, John, Nethershiel, East Calder
1877 Hunter, John, jun., Woodhall Mains, Juniper Green
1871 Hunter, Patrick, Argaith, Perth
1879 Hunter, Major Patrick, of Auchterarder
1878 Hunter, Thomas, Maybole
1862 Hunter, Robt., 10 Ainslie Place, Edinburgh
1869 Hunter, William, Craighead, Abington
1853 Hunter, William B., North Berwick
1857 Hunter, William, Machribeg, Campbeltown
1872 HUNTLY, Most Noble the Marquis of, Aboyne Castle, Aboyne
1882 Hutcheson, Andrew, West Mill, Inchture, Perth
1883 Hutchinson, Alan, Camserney Cottage, Aberfeldy
1883 Hutchison, Alex., Ingleside, Kirkcaldy
1880 Hutchison, Graham, of Balmaghie, Castle-Douglas
1857 Hutchison, James, Mouswald Farm, Dumfries
1872 Hutchison, James Thomas, 12 Douglas Crescent, Edinburgh
1879 Hutchison, John Wm., of Edinghame, Argrennan, Castle-Douglas
1871 Hutchison, Robert, Merchiston Avenue, Edinburgh
1850 Hutchison, Robt., Braehead, Kirkcaldy
1858 Hutchison, R., of Carlowrie, 29 Chester Street, Edinburgh
1875 Hutchison, Thomas, Bellfield, Duddingstone
1875 Hutchison, Thomas, Broomhill, Loanhead
1868 Hutton, Arthur, Comlongan Castle, Annan
1859 Hyndman, Henry C., of Springside, 6 South Park Terrace, Hillhead, Glasgow
1870 Hyslop, And., Auchenreoch, Dalbeattie
1880 Hyslop, Wm., Cleuries, Sanquhar

1880 Imrie, James S., Somerset Villa, Perth
1873 Imrie, John L., Blackhill, Maryhill, Glasgow
1878 Inch, John, Howburn, Walston, Biggar
1877 Inch, Robert, 1 Victoria Street, Edinburgh
1870 Inch, Thomas, Gilderscleuch, Abington
1869 Inglis, Alex. Wood, yr. of Glencorse, 30 Abercromby Place, Edinburgh
1864 Inglis, George, Dron, Cupar Fife
1879 Inglis, George, of Newmore, Invergordon
1847 Inglis, Harry Maxwell, of Loganbank, 31 Abercromby Place, Edinburgh

Admitted
1856 Inglis, Lieut.-Col. Hugh, of Kingsmills, Inverness
1852 INGLIS, Right Hon. John, of Glencorse, Lord Justice-General, 30 Abercromby Place, Edinburgh
1860 Inglis, John, Junction Steam Mills, Leith
1857 Inglis, John, of Redhall
1864 Inglis, John, Kepdarroch, Gargunnock
1865 Inglis, Peter, East Pilton, Ferry Road, Edinburgh
1877 Inglis, Robert, Loveston House, Girvan
1876 Inkson, Thomas F Kinermony, Craigellachie
1840 Innes, Alex., of Raemore, Banchory
1842 Innes, Alexander Mitchell, of Ayton
1874 Innes, Charles, Solicitor, Inverness
1847 Innes, George Mitchell, of Bangour, 32 Buckingham Terrace, Edinburgh
1881 INNES, Sir J., of Balveny and Edengight, Bart., Keith
1846 Innes, Col. Thos., of Learney, Torphins
1842 Innes, Thomas S. Mitchell, of Phantassie, Prestonkirk
1862 Innes, T. G. Rose, of Netherdale, Turriff
1879 Ireland, David S., of Denork, St Andrews
1858 Ironside, John, Brindy, Keig, Whitehouse, Aberdeen
1859 Ironside, William, Clofrickford, Ellon
1845 Irvine, Alex. Forbes, of Drum, Sheriff of Argyll, 25 Castle Terrace, Edinburgh
1873 Irvine, George Forbes, Nigg, Ross-shire
1869 Irvine, Walter, Grangemuir, Pittenweem
1843 Irvine, Wm. Stewart, M.D., Craigatin, Pitlochry
1870 Irvine, Ben., Bardennoch, Auldgirth, Dumfries
1870 Irvine, Christopher, Blackearn, Castle-Douglas
1869 Irving, J. Bell, of Whitehill, Lockerbie
1872 Irving, Samuel, Carco, Kirkconnel, Sanquhar

1872 Jack, Gavin, North Gyle, Corstorphine
1864 Jack, John S., Cambusdrennie, Stirling
1863 Jack, M., late Peggy's Mill, Cramond Bridge
1860 Jack, Samuel, Mersington, Coldstream
1855 Jack, Robert, Banker, Motherwell
1869 Jack, Thomas, Hermiston, Edinburgh
1870 Jackson, John, late Bush, Ewes, Langholm
1876 Jaffray, James, Belmont, Unst
1881 Jaffray, William, Broomridge, St Ninians, Stirling
1852 Jameson, Melville, Solicitor, Perth
1880 Jamieson, Alex., 31 Barossa Place, Perth
1858 Jamieson, David, Auchmithie Mains, Arbroath
1876 Jamieson, George, 34 Nether Kirkgate, Aberdeen
1860 Jamieson, George Auldjo, C A., 24 St Andrew Square, Edinburgh
1874 Jamieson, James Auldjo, W.S., 66 Queen Street, Edinburgh
1880 Jamieson, John, 31 Barossa Place, Perth
1874 Jamieson, Robt. J., S.S.C., Borrowstounness
1871 Jamieson, Thos., High Curghie, Drumore, Stranraer
1875 Jamieson, Wm., of Shandon, Helensburgh
1876 Jamieson, William T., Solicitor, Anstruther
1858 Jamieson, Wm. H., Thornlie Villa, Loanhead

Admitted
1850 JARDINE, Sir Alexander, of Applegirth, Bart., Jardine Hall, Lockerbie
1873 Jardine, Andrew, Ballemenoch, Helensburgh
1878 Jardine, Arthur Murray, of Granton, Moffat
1881 Jardine, James, Kilunan, Fintry
1846 Jardine, Jas. of Larriston, Dryfeholm, Lockerbie
1863 Jardine, Robt., of Castlemilk, M.P., Lockerbie
1877 Jardine, Wm., Bogside, Fintry, Glasgow
1870 Jefferson, Robt., Preston Hows, Whitehaven
1857 Jeffray, John, Cardowan House, Millerston, Glasgow
1876 Jeffrey, Arthur, Banks, Fyvie
1869 Jeffrey, David, 14 Randolph Crescent, Edinburgh
1859 Jeffrey, John, of Balsusney, Largo House, Largo
1880 Jenkinson, A. D., 10 Princes Street, Edinburgh
1855 Jobson, William, Ashfield Villa, Heaton, Newcastle
1872 Johnson, W. H., Ramrig, Ladykirk, Berwickshire
1852 Johnston, Alex , Hailes, Slateford
1877 Johnston, Alexander, North Mains, Ormiston
1872 Johnston, Donald, Kilbride, Easdale, Oban
1857 Johnston, G., M.D., Fincraigs, Newport
1872 Johnston, Geo., Aquhorthies, Inverurie
1857 Johnston, James, Huntingdon, Lauder
1876 Johnston, James, Pather Farm, Wishaw
1871 Johnston, James, Cattle-dealer, Perth
1878 Johnston, Jas., Lochburnie, Maryhill
1879 Johnston, James, jun., Secretary, Orkney Agricultural Society, Hall of Tankerness, Kirkwall
1877 Johnston, James, Gairloch, Dumfries
1856 Johnston, John, Banker, Bathgate
1869 Johnston, John, Kingledoors, Biggar
1853 Johnston, J. S., Crailinghall, Jedburgh
1877 Johnston, Laurence (of Sands, Perth), 11 Castle Street, Edinburgh
1839 Johnston, Robt., 16 Queen's Road, Aberdeen
1882 Johnston, Samuel W., Fincraigs, Newport, Fife
1860 Johnston, Lieut.-Gen., of Carnsalloch, Castle-Douglas
1871 Johnston, Stewart J., Cattle-dealer, Perth
1859 Johnston, Thos., Lochhouse, Moffat
1881 Johnston, Walter, Whitfield, West Linton
1848 JOHNSTON, Sir William, of Kirkhill, Gorebridge
1852 Johnston, Wm., Writer, Bathgate
1876 Johnston, William (late Mill of Haulkerton, Laurencekirk), South Africa
1857 Johnston, William, Ranachan, Campbeltown
1878 Johnston, Wm., of Cowhill, Dumfries
1850 Johnstone, Christopher, Glengyle Place, Edinburgh
1828 Johnstone, James, of Alva, Stirling
1860 Johnstone, James, Banker, Dumfries
1873 Johnstone, James, Hunterheck, Moffat
1876 Johnstone, John, Drumwhindle Mains, Ellon
1873 Johnstone, Jn., of Halleaths, Lockerbie
1875 Johnstone, John, Springbank, Fordoun
1859 Johnstone, John A., Archbank, Moffat
1870 Johnstone, John James Hope, of Annandale, Raehills, Lockerbie

Admitted
1866 Johnstone, Miss Hope, of Annandale, Marchbank Wood, Moffat
1881 Johnstone, Michael, Archbank, Moffat
1859 Johnstone, Robert, Polmoodie, Moffat
1859 Johnstone, Walter, Alton, Moffat
1874 Johnstone, W. M., National Bank of Scotland, Cupar Fife
1862 Jones, Charles Digby, 12 Chester Street, Edinburgh
1865 Joss, John, Budgate, Cawdor, Nairn
1873 Juckes, R. F., Cotwall, Wellington, Salop—*Free Life Member*

1875 Kay, Charles, Mill Farm, Gargunnock
1871 Kay, Duncan James, of Drumpark, Dumfries
1881 Kay, Robert, Mains Farm, Gargunnock, Stirling
1867 Kay, Robert, Tuns, Minard, Inveraray
1871 Kay, Robert, Linton Bankhead, Kelso
1863 Kay, Wm., Broomieknowe, Lasswade
1863 Kay, Wm., Inch Farm, Kincardine-on-Forth
1879 Keay, Robert, Assistant Town-Clerk, Perth
1844 Keir, Andrew T., Nairnside, Cawdor
1864 Keir, Duncan, Buchlyvie, Stirling
1837 Keir, Patrick Small, of Kindrogan, Pitlochry
1859 Keir, William, of Whithaugh, Newcastleton
1876 Keith, Alexander, Chapelton, Ellon
1876 Keith, James, Newton, of Kinmundy, Mintlaw
1865 Keith, Peter, Factor, Barogill Castle, Wick
1874 Kelman, Wm., Balnagore, Fearn
1876 Kemp, Chas., Methercluny, Dufftown
1852 Kemp, John, Agricultural Implement Maker, Stirling
1882 Kennedy, Archd. (Bash & Co.), 77 Charlotte Street, Glasgow
1863 Kennedy, David, Castlehill, Dumfries
1865 Kennedy, Henry H., Rossie Castle, Montrose
1859 Kennedy, Jas., of Sundaywell, Brandleys, Sanquhar
1874 Kennedy, John, Kinchillie, Roy Bridge, Kingussie
1871 Kennedy, John, Royal George Hotel, Perth
1878 Kennedy, John B., Stenhouse, Thornhill
1878 Kennedy, John Gillison, Newlands, Dumfries
1846 Kennedy, John Lawson of Knocknalling, Dalry, Galloway
1878 Kennedy, John Murray, yr. of Knocknalling, Dalry, Galloway
1875 Kennedy, William, 89 Marine Parade, Brighton—*Free Life Member*
1842 Kennedy, William, Commission Agent, Glasgow
1870 Kennedy, Wm., Kirkland, Sanquhar
1874 Kennedy, Wm., Dalmakkeran, Thornhill
1860 Kennoway, Robt., Burnhead; Lasswade
1863 Ker, E. Martin (late of Gateshaw, Morebattle, Kelso), London
1854 Ker, Robt. of Douglaston, Milngavie
1878 Ker, T. Ripley, yr. of Douglaston, Milngavie
1864 Kerr, Abraham, Castlehill, Durrisdeer, Thornhill
1878 Kerr, Arch., Upper Dormont, Lockerbie
1869 Kerr, James, Lochend, Kilbirnie
1880 Kerr, Jas. B, Commercial Bank, Kelso
1859 Kerr, John, Ferrygate, North Berwick
1875 Kerr, John, Blountfield, Dumfries
1853 Kerr, John, Land Surveyor, Duns

Admitted
1879 Kerr, John, Rossie Ochil, Bridge of Earn
1870 Kerr, Jos., Flatts of Cargen, Dumfries
1857 Kerr, Robert, of Chapeldonan, 9 Great Stuart Street, Edinburgh
1857 Kerr, Robert, Factor, Ballikinrain, Killearn
1881 Kerr, Thomas, Forehill, Caputh
1860 Kerr, Thomas, Whitehill, Sanquhar
1845 Kerr, Wm. Williamson, late Oriel College, Oxford
1875 Kerr, William, Newhouse, Dalry, Ayrshire
1833 Kerr, W. S., of Chatto, Sunlaws, Kelso
1882 Keyden, James, Cattle Salesman, Stirling
1865 Kidd, Alexander F., East High Street, Airdrie
1874 Kidd, Hugh, V.S., Market Place, Hungerford, Berks
1869 Kidd, Walter, Balleny, Currie
1850 Kidston, Jn. P., Nym Park, Barnet, Herts
1875 Kidston, Richard, 81 Great Clyde Street, Glasgow
1864 Kier, Thomas, Newlands, Falkirk
1876 Kilgour, Robert, jun., Ardlin, Ellon
1882 Kilpatrick, Jas., Craigie Mains, Craigie, Kilmarnock
1862 Kilpatrick, P., Durley Manse, Bishops Waltham, Hants
1868 King, Charles M., Antermony House, Milton of Campsie
1864 King, David, Dunedin, New Zealand
1857 King, James, of Levernholm, 12 Claremont Terrace, Glasgow
1872 King, James, West Mills, Colinton
1850 King, Jas. F., 5 Richmond Street, Glasgow
1871 King, J. Falconer, Analytical Chemist, Chambers Street, Edinburgh
1869 King, Robert, Levernholm, Hurlet
1873 King, William, jun., Earne, Doune
1868 King, Lieut.-Col. Wm. Ross, of Tertowie, Kinaldie, Aberdeen
1859 Kininmonth, Peter, Milton, Leuchars
1859 KINLOCH, Sir Alexander of Gilmerton, Bart., Drem
1877 Kinloch, Sir John George Smith, of Kinloch, Bart., Meigle
1829 Kinloch, Col. John Grant, of Kilrie, Logie, Kirriemuir
1862 KINNAIRD, Right Hon. Lord (Rossie Priory, Inchture), 1 Pall Mall East, London
1853 KINNAIRD, Hon. the Master of, Rossie Priory, Inchture
1873 Kinnear, Arthur W., Stonehaven
1876 Kinnear, C. G. H., of Drum, 12 Grosvenor Crescent, Edinburgh
1853 KINNOUL, Right Hon. the Earl of, Dupplin Castle, Perth
1873 Kinross, Andrew, Hungryhill, Dunblane
1876 Kinross, James, Coldstream, Laurencekirk
1864 Kinross, John, Hillend House, Clackmannan
1871 Kinross, Thomas, Loig, Braco, Perthshire
1876 KINTORE, Right Hon. the Earl of, Keith Hall, Inverurie
1875 Kippen, Durham, of Busby, Glasgow
1848 Kirk, John, W.S., 119 Princes Street, Edinburgh
1861 Kirk, James, Kaimknow, Muckhart
1874 Kirkland, Major-General John Agmondisham Vesey, of Wester Fordel, Milnathort
1875 Kirkness, John, Quoyostry, Rousay, Orkney

Admitted
1860 Kirkpatrick, A., of Allanshaw, Hamilton
1875 Kirkpatrick, David, Linns, Torthorwald
1876 Kirkpatrick, James, Redhills, Torthorwald, Dumfries
1879 Kirkpatrick, James, Auctioneer, Annan
1860 Kirkpatrick, Samuel, West Roucan, Dumfries
1880 Kirkwood, Alexander, Medallist to the Society, 9 St James Square, Edinburgh
1871 Kirkwood, Allan, Killermont, Maryhill, Glasgow
1878 Kirwan, Lionel Maitland, Bellrigg, Kelton Hill, Castle-Douglas
1879 Knight, Robert, jun., V.S., Woodhead Street, Dunfermline
1867 Knight, Wm. Gray, of Jordanstone, Meigle
1874 Knox, Robt., Woodside, Cambus, Alloa
1879 Kyd, George (Hay & Kyd), Perth
1869 Kynoch George, jun., Isla Bank Mills, Keith
1872 Kynoch, Patrick, M.D., Greenlaw, Berwickshire

1878 Laidlaw Robert, Rodono, Selkirk
1863 Laidlay, J. W., of Seacliff, North Berwick
1883 Laidlay, R. W., Halls, Dunbar
1877 Laing, Alexander, S.S.C., Glenord, Spylaw Road, Edinburgh
1863 Laing, George, Wark, Coldstream
1856 Laing, John, Newburgh, Fife
1880 Laing, Thomas (Laing & Mather), Kelso
1880 Laing, Walter, Manorhill, Kelso
1874 Laing, William, Skaill, Thurso
1858 Laird, Geo. W., of Denfield, Arbroath
1882 Lamberton, Andrew, Sunnyside Works, Coatbridge
1842 LAMINGTON, Right Hon. Lord, Lamington, Lanarkshire
1871 Lamont, Charles, of East Bank, Kinross
1850 Lamont, James, of Knockdow, Greenock
1866 Lamont, Jn., Johns Cottage, Henderson Row, Edinburgh
1854 L'Amy, John Ramsay, of Dunkenny, 105 Cromwell Road, S.W.
1879 Landale, Andrew, Woodmill, Auchtermuchty
1878 Landale, James, Cockburnhill, Balerno
1874 Landale, John, of Woodbank, Banker, Dunfermline
1855 Landale, Thomas, 4 Mayfield Terrace, Edinburgh
1867 Lang, Alex., Borthrickfield, Bridge of Weir
1875 Lang, Alex., Garneyland, Paisley
1881 Lang, Hugh, Glengorm, Tobermory
1849 Lang, Hugh M., of Broadmeadows, Selkirk
1864 Lang, John, Bield, Gargunnock
1881 Lang, Robert, Aros Mains, Aros, Mull
1878 Lang, Robert J., Broadmeadows, Selkirk
1854 Lang, William, Glengorm, Tobermory
185. Langlands, James C., Bewick, Alnwick
1857 Latham, Patrick R., Tweed Terrace, Bridge of Allan
1864 Latta, Mat. Roger, Carmyle, Tollcross, Glasgow
1873 Latta, William, Dalmalloch, Cumnock
1868 Lauder, Alex., Goshen, Musselburgh
1859 Lauder, Dewar, St Nicholas, St Andrews
1880 LAUDERDALE, Right Hon. the Earl of, Thirlstane Castle, Lauder
1877 Laurence, P., 57 Hanover Street Edinburgh

Admitted
1848 Laurie, William Kennedy, of Woodhall, Castle-Douglas
1868 Law, James, East Mains, Broxburn
1876 Law, John, New Keig, Whitehouse, Aberdeen
1868 LAWES, Sir John B., of Rothamstead, Bart., St Albans
1874 Lawrence, James, Forres Mills, Forres
1876 Lawrence, W. J., Gowanhill, Cortes, Lonmay
1872 Lawrie, Alex., Hardens, Duns
1878 Lawrie, Jas. D., of Monkrigg, Haddington
1873 Lawrie, John, Kirklandhill, Leven
1872 Lawrie, John W., Mitchelston, Stow
1883 Lawrie, Robert, Manager, Glencassley, Invershin
1872 Lawrie, Thos., Esperston, Gorebridge
1872 Lawrie, Thomas, Seed Merchant, Newton St Boswells
1875 Lawrie, Wm., Architect, Inverness
1853 Lawson, Alex., of Burnturk, Kettle
1843 Lawson, Alexander, Merchant, Dundee
1854 Lawson, Alexander, Brae Lossie, Elgin
1846 Lawson, Chas., 34 George Square, Edinburgh
1871 Lawson, Charles, Deebank, Cults, Aberdeen
1868 Lawson, C., Ordhead, Cluny, Aberdeen
1868 Lawson, Geo. Stoddart, Brighton
1859 Lawson, Henry Graham, Shoreham Lodge, Shoreham, Sussex
1876 Lawson, James, Westerton, Huntly
1867 Lawson, Thomas, of Carriston, Markinch
1867 Lawson, Thomas, Sandyford, Kirriemuir
1853 Lawson, Wm., Platchaig, Beauly
1882 Learmonth, Robert, Westness, Rousay, Orkney
1868 Learmonth, Lieut.-Col. Alex., of Dean, 73 Eaton Place, London
1878 Learmonth, Donald H., Housebay, Stronsay
1880 Learmonth, George Gray, North Bank, Bo'ness
1869 Learmonth, Thomas Livingstone, of Park Hall, Polmont
1881 Leask, William, Skilmafilly, Ellon
1876 Ledingham, Alexander, Drumblair, Forgue, Huntly
1878 Lee, A. H., of Blairhoyle, Port of Monteith
1863 Lee, John, late Dollar Bank, Dollar
1877 LEE, Hon. Lord, 26 Charlotte Square, Edinburgh
1855 Lees, John, late Marvingston, Haddington
1863 Lees, Richard, Drinkstone, Hawick
1878 Leggat, Alex., Killyleoch, Dunscore, Dumfries
1864 Leishman, James, of Broomrigg, Dollar
1864 Leishman, T., 25 Park Terrace, Stirling
1858 Leitch, Arch. K., Inchstelly, Forres
1877 Leitch, Simon, Factor, Elwickbank, Shapinsay, Orkney
1841 Leith, Alex., of Freefield, Glenkindie, Inverkindie
1869 Leith, Major Thomas, Westhall, Oyne
1875 Leithhead, James, 8 Queensberry Terrace, Edinburgh
1857 Lennie, John, Long Newton, Gifford
1878 LENNOX, Hon. C. S. B. H. Kincaid, Lennox Castle, Lennoxtown
1878 Lennox, David, Merchant, Dumfries
1873 Lennox, James, Doune, Glendouglas, Luss
1865 Leny, W. Macalpine, of Dalswinton, Dumfries
1876 Leslie, A. F., Braco, Keith

Admitted
1840 Leslie, G. A. Young, of Kininvie, Bedford
1862 LESLIE, Hon. George Waldegrave, Leslie House, Leslie
1857 Leslie, James, Thorn, Blairgowrie
1873 Leslie, Robert C., of Butterglen, Dunkeld
1879 Leslie, Thomas W., Welton, Blairgowrie
1863 Lesslie, James, Boghall, Linlithgow
1879 Letham, John, East Mains, Stonehouse
1864 Lidderdale, Wm. H., Writer, Castle-Douglas
1858 Ligertwood, John, Sheriff-Clerk, County Buildings, Aberdeen
1875 Lightfoot, Henry Le Blanc, Fonthill Abbey, Salisbury
1877 Lindesay, William Francis, Balmungo, St Andrews
1878 Lindsay, Hugh, Meadowflatt, Thankerton
1878 Lindsay, James, Holehouse, Penpont
1873 Lindsay, Jas., Whitecastles, Lockerbie
1857 Lindsay, James, New Zealand
1865 Lindsay, John, Thornhill, Stewarton
1878 Lindsay, John V., Whitehope, Selkirk
1857 Lindsay, Thomas, Flemington Mill, Lamancha
1878 Lindsay, Thomas, Townend, Craigie, Kilmarnock
1869 Lindsay, Thos. S., 55 Castle Street, Edinburgh
1854 Lindsay, William, 7 Hermitage Hill, Leith
1875 Linn, William, 2 Park Terrace, Newcastle-on-Tyne
1873 Linton, Simon, Glenrath, Peebles
1878 Linton, W. T., Mount Benger, Selkirk
1863 Lithgow, E., Bedshiel, Greenlaw, Duns
1869 Little, James, Sark Tower, Canonbie
1878 Little, James Church, Caulfield, Langholm
1859 Little, John, Meikleholmside, Moffat
1870 Little, Wm., Burnfoot, Langholm
1878 Little, William, High Borgue, Twynholm, Kirkcudbright
1883 Littlejohn, Alex., of Invercharron, Ardgay
1876 Littlejohn, William, Whitemyres, Old Skene Road, Aberdeen
1879 Livingston, John, Brae of Cluny, Tullypowrie, Perthshire
1863 Livingstone, Thos. L. Fenton, of West Quarter, Falkirk
1875 Lloyd, Thomas, of Minard Castle, Inveraray
1882 Locke, Matthew, Arthurlie, Barrhead
1878 Lockhart, James, Mains of Airies, Stranraer
1866 Lockhart, Robert, jun., 10 Polwarth Terrace, Edinburgh
1872 LOCKHART, Sir Simon M., of Lee and Carnwath, Bart., Lanark
1870 Lockhart, W. Elliott, of Borthwickbrae, Branxholme, Hawick
1859 Lockie, Will., West Morriston, Earlston
1879 Loder, Robert, M.P., Whittlebury, Towcester
1878 Logan, David, Wragmire House, Carlisle
1876 Logan, J. W., The Avenue, Berwick
1872 Loney, Peter, Marchmont, Duns
1881 Lonsdale, Claud, Rose Hill, Carlisle
1865 Lorimer, J., Achrossan, Tigh-na-bruaich
1843 Lorimer, T. W., Mountrule, Douglas, Isle of Man
1869 Lorimer, William, Rigg, Sanquhar
1869†LORNE, Most Noble the Marquis of, K.T. Canada
1869*†LOTHIAN, Most Noble the Marquis of, K.T., Newbattle Abbey, Dalkeith

Admitted
1883 Lothian, James, Land Agent and Factor, Campbeltown
1874 Lothian, Maurice John, Glenlora, Lochwinnoch
1882 Loudoun, Archd., Loudoun Arms Hotel, 259 Duke Street, Glasgow
1853†LOVAT, Right Hon. Lord, Beaufort Castle, Beauly
1875 Love, Alexander, Margaret's Mill, Kilmacolm
1874 Love, James, late 1 Dellingburn Street, Greenock
1857 Lovie, Alex., Nether Boyndlie, Fraserburgh
1843 Low, James, Laws, Whitsome
1878 Low, Peter, V.S., Perth
1861 Lowe, Robert, General Agent, Perth
1850 Lowndes, James, of Arthurlee, Barrhead
1871 Lowson, William (of Balthayock, Perth), Gray Bank, Dundee
1861 Lumsden, David, Pitcairnfield, Perth
1850 Lumsden, G., Leslie Lodge, Inverurie
1857 Lumsden, George, 30 Drumsheugh Gardens, Edinburgh
1877 LUMSDEN, General Sir Harry B., Belhelvie Lodge, Aberdeen
1869 Lumsden, Henry, of Pitcaple, Pitcaple
1877 Lumsden, Hugh Gordon, of Auchindoir, Aberdeen
1875 Lumsden, James, of Arden, Alexandria, N.B.
1876 Lumsden, William Harry, of Balmedie, Belhelvie
1870 Lusk, And., Howwell, Kirkcudbright
1877 Lusk, Peter, Craigcaffie, Stranraer
1872 Lyal, William, Fogorig, Duns
1850 Lyall, Chas., Old Montrose, Montrose
1854 Lyall, David, of Gallery, Montrose
1850 Lyall, Robert, Kellybank, Dollar
1854 Lyell, David, S.S.C., 39 Castle Street, Edinburgh
1861 Lyell, John, Newburgh
1870 Lyon, Thomas A., Whitecroft, Lockerbie

1870 M‘Adam, Jas. Nichol, High Trees, Marlborough, Wilts
1857 Macadam, John, Blairo'er, Drymen
1859 Macadam, Dr Stevenson, F.R.S.E., Surgeons' Hall, Edinburgh
1840 Macalister, A., of Loup and Torrisdale
1882 M‘Alister, Ebenezer, of Carbeth Guthrie, Glasgow
1842 Macalister, Keith, of Glenbarr, Greenock
1855 M‘Alister, Robert, Mid Ascog, Rothesay
1872 Macallum, Donald, Balligowan, Oban
1873 M‘Alpine, James, Tile Manufacturer, Springfield, Stirling
1854 Macandrew, D. M., Kilrock, Asheldon Road, Torquay
1873 Macandrew, Henry C., Sheriff-Clerk, The Castle, Inverness
1882 M‘Ara, Alex., Land Steward, Culdees, Muthill, Perthshire
1862 Macarthur, John, Barbreck, Banker, Inveraray
1840 Macarthur, Major Alexander
1842 Macarthur, Duncan, New Zealand
1840 Macaskill, Donald (late of Rhudunan), New Zealand
1853 M‘Auslan, J., late Kilbridbeg, Cairndow
1865 M‘Bean, D., Auchterblair, Carr Bridge
1871 McBean, John, New Zealand
1871 McBeath, James, Brims, Thurso
1863 Macbraire, James, of Broadmeadows, Berwick
1878 M‘Caig, Alex., Kilhilt, Stranraer
1870 M‘Call, George, Burrance, Kirkmichael, Lockerbie

Admitted
1870 M‘Call, James, Caitloch, Moniaive
1868 M‘Call, Professor James, Veterinary College, Glasgow
1846 M‘Call, Henry, of Daldowie, Glasgow
1874 McCallum. Alex. Inglis, Chemist and V.S., 5 Grassmarket, Edinburgh
1872 McCallum, Dun., Clenmachrie, Oban
1842 M‘Callum, George Kellie, of Braco, Castle Braco, Perthshire
1879 M‘Callum, James, Fendoch, Crieff
1861 M‘Callum, John, Bank Place, Crieff
1875 McCamon, John, Kirronrae, Kirkcolm
1864 M‘Candlish, Jn. M‘Gregor, W.S., 27 Drumsheugh Gardens, Edinburgh
1871 McCash, John, Grain Merchant, Perth
1873 McCaull, Peter, Dykedale, Dunblane
1851 M‘Caw, Alexander, New Zealand
1857 M‘Chlery, Henry, London
1851 M‘Clean, Alex. H., Auchneal, Stranraer
1880 M‘Clellan, Rev. John Brown, Royal Agricultural College, Cirencester
1878 M‘Clew, David Andrew, Dinvin, Portpatrick
1870 M‘Clew, John, Dinvin, Portpatrick
1878 M‘Clure, William, Banker, Lockerbie
1879 M‘Coll, Duncan, Clachan, Lismore, Oban
1840 M‘Combie, J. Boyn, Advocate, Aberdeen
1858 M‘Combie, Peter, Upper Farmton, Whitehouse, Aberdeen
1858 M‘Combie, Robert, Brawliemuir, Drumlithie
1840 M‘Combie, William, of Easter Skene, Skene, Aberdeen
1878 M‘Conchie, Andrew, Mains of Penninghame, Newton-Stewart
1878 M‘Conchie, John, Carsewilloch, Creetown
1858 M‘Connach, Charles, Cairnballoch, Alford, Aberdeen
1868 M‘Connel, Frederic, of Blackyett, Annan
1874 M‘Connel, William, of Knockdolian, Girvan
1842 M‘Connell, John, Richmond, Surrey
1857 M‘Connell, John A., Chapelheron, Whithorn
1878 M‘Connell, Thomas M., V.S., Wigtown
1878 M‘Connell, Primrose, 14 Carrick Park, Ayr—*Free Life Member*
1882 M‘Connell, William, Glasnick, Kirkcowan
1878 M‘Cormick, John, Lochenkit, Corsock, Dalbeattie
1881 M‘Corquodale, David, Banker, Carnoustie
1880 M‘Corquodale, William, Jeanie Bank, Scone, Perth
1877 M‘Cosh, Peter, Cairngawn, Drumore, Kirkmaiden
1882 M‘Cowan, Alex., of Newtonairds, Holywood, Dumfries
1882 M‘Cowan, Robert William, Accountant, 87 St Vincent Street, Glasgow
1877 M‘Cracken, A. E., Gillespie, Glenluce
1878 M‘Cracken, William, Blackhall, Kirkwhelpington, Newcastle-on-Tyne—*Free Life Member*
1850 M‘Culloch, Alexander, of Glen, Gatehouse of Fleet
1870 M‘Culloch, David, Bank-Agent, North Berwick
1870 M‘Culloch, John, Illinois Trust and Savings Bank, Chicago, Ills., U.S.
1878 M‘Culloch, Peter, jun., Whitefield, Glenluce
1869 M‘Culloch, R. C., late Kirkland of Longcastle, Kirkinner
1849 M‘Culloch, Walter, of Ardwell, Gatehouse of Fleet

Admitted
1871 M'Culloch, William, Crieff
1858 M'Diarmid, Charles A., Rockwood, Killin
1858 M'Diarmid, D. A., Killiemore, Auchnacraig, Mull
1858 M'Diarmid, Duncan, Camusericht, Rannoch
1881 Macdiarmid, H., Factor, Tiree, Tobermory
1882 MacDiarmid, Robert, Glengowlandie, Aberfeldy
1838 M'Donald, Dr Alex., Prince Edward's Island
1841 Macdonald, Alexander, Wine Merchant, Inverness
1854 Macdonald, A., of Edenwood, Balranald, Lochmaddy
1874 Macdonald, Alex., Nether Largie, Kilmartin
1883 Macdonald, Alex., Factor, Novar, Ross-shire
1874 MacDonald, Alex. Ronald, Ord, Isle Ornsay, Broadford, Skye
1841 Macdonald, Major-Gen. Alister M'Ian, of Dalchosnie, Rannoch
1883 Macdonald, Allan, Solicitor, Inverness
1883 Macdonald, Andrew, Charleston, Inverness
1882 Macdonald, Angus, Bellfield, Campbeltown
1855 Macdonald, Archd. Burns, of Glencoe, Perth
1855 Macdonald, A. S., Sunnyside, Invergordon
1860 Macdonald, D., Athole Arms Hotel, Blair Athole
1868 M'Donald, Donald, Culcraggie, Alness
1883 Macdonald, Donald, 54 George IV. Bridge, Edinburgh
1872 Macdonald, Donald, Tormore, Broadford, Skye
1865 Macdonald, D. P.. Invernevis, Fort-William
1871 M'Donald, J., Comrie Farm, Aberfeldy
1883 Macdonald, James, Editor, *Farmers' Gazette*, Dublin
1881 Macdonald, James, Vallay, North Uist, Lochmaddy
1881 Macdonald, John Macdonald Stewart, Monachyle, Lochearnhead
1875 M'Donald, John, Newton, Lochmaddy
1873 Macdonald, John, Porterfield, Renfrew
1879 MacDonald, John (Belmore, Gareloch, Helensburgh), 12 Cavendish Place, Cavendish Square, London, W.
1880 Macdonald, Montague, yr. of St Martins, Perth
1861 Macdonald, Peter, The Douglas Hotel, Brodick, Ardrossan
1868 Macdonald, R., Cluny Castle, Aberdeen
1874 Macdonald, W. D. A. Robertson, of Kinlochmoidart, Ardgour
1839 Macdonald, Roderick C., of Castle Teirim, Prince Edward's Island
1861 Macdonald, Wm., of Balnakilly, Blairgowrie
1874 MacDonald, William, Editor, *North British Agriculturist*, Edinburgh
1871 M'Donald, William, Woodlands, Perth
1860 Macdonald, W. S., Craigielaw, Longniddry
1865 Macdonald, William, Banker, Elgin
1844 Macdonald, Lieut.-Col. William Macdonald, of St Martin's, Perth
1846 Macdonell, Æneas Ranald, of Morar, Fort-William
1882 Macdonell, R. Talbot, Morar, Fort-William
1865 M'Douall, James, of Logan, Stranraer
1868 M'Dougal, George, Blythe, Lauder

Admitted
1875 M'Dougal, Thomas, Eskvale, Penicuik
1872 M'Dougall, Col. Charles A., of Dunollie, Oban
1871 M'Dougall, John, Goodlyburn, Perth
1860 M'Dougall, Archibald, Ardtalanaig, Kenmore
1871 M'Dougall, John W., yr. of Orchill, Blackford
1878 M'Dougall, Wm., Achandarroch, Ballachulish
1870 M'Dowall, Andw., Auchtralure, Stranraer
1870 M'Dowall, Andrew, Harelaw, Currie
1880 M'Dowall, A. H., Seedsman, Stranraer
1875 Macdowall, Henry, of Garthland, Lochwinnoch
1878 M'Dowall, T. N., Auchtralure, Stranraer
1878 M'Dowall, Robert, Auchengallie, Port William
1874 Macduff, Alex., of Bonhard, Perth
1879 MacDuff, Donald, Tomnagrew, Dunkeld
1876 M'Duff, Wm, Tomnagairn, Dunkeld
1834 Macewan, J., of Tar of Ruskie, Callander
1846 M'Ewan, Alexander, late of Sunderland
1873 M'Ewan, William, Cambushinnie, Dunblane
1850 M'Ewen, John, of Glenlora, Lochwinnoch
1864 M'Ewen, John, Redside Farm, North Berwick
1865 M'Ewen, John, Merchant, Stirling
1865 MacEwen, John C., Inverness
1877 M'Fadyean, Professor John, Vet. College, Clyde Street, Edinburgh
1878 M'Farlan, George, Forester, Closeburn Mains, Thornhill
1851 M'Farlan, John, Faslane, Garelochhead
1883 Macfarlane, Alex., Caledonian Hotel, Inverness
1874 Macfarlane, Alex. (Mealldarroch, Tarbert, Lochfine), 27 Palmerston Buildings, Greenock.
1857 Macfarlane, Alexander, Pollanilline, Campbeltown
1873 M'Farlane, Colin, Strone, Glenfruin, Garelochhead
1870 Macfarlane, Dr David, Drymen
1880 Macfarlane, David, Needburn, Methven
1857 Macfarlane, Donald, Auchray, Aberfoyle
1860 Macfarlane, Donald, Balmuildy, Bishopbriggs
1873 M'Farlane, Duncan, Greenfield, Garelochhead
1857 Macfarlane, Duncan, Torr, Helensburgh
1869 M'Farlane, James, of Easter Radernie, Dunfermline
1857 Macfarlane, John, late of Ballencleroch, Lennoxtown
1872 Macfarlane, John, Hillhead, Glasgow
1873 Macfarlane, Lewis, Lettermay, Lochgoilhead
1868 Macfarlane, Malcolm, Hutchestown Farm, Dunblane
1879 M'Farlane, Richard, 1 Great Western Terrace, Glasgow
1878 Macfarlane, Samuel, Meadowbank, Torrance of Campsie
1879 Macfarlane, Walter, 22 Park Circus, Glasgow
1879 M'Farlane, Wm., Agricultural Implement Maker, Welltown, Meigle
1862 Macfie, C., of Gogarburn, Corstorphine
1865 Macfie, David J., of Borthwick Hall, Heriot
1864 Macfie, Robert Andrew, of Dreghorn, Colinton
1860 Macfie, Samuel, 7 Brownlow Street, Liverpool
1869 Macfie, Wm., of Clermiston, Corstorphine

Admitted
1865 M‘Gavin, Robert, of Ballumbie, Dundee
1863 M‘Gibbon, David, Ardnacraig, Campbeltown
1860 M‘Gill, James, Banker, Dumfries
1850 M‘Gill, John, Barsalloch, Wigtown
1878 M‘Gill, William, Boreland, Newton-Stewart
1879 M‘Gillivray, Allan, Gordon Hall, Kingussie
1876 MacGillivray, Dr D. W., Eoligary, Barra, Lochmaddy
1883 MacGillivray, Finlay, Solicitor, Inverness
1874 M‘Gillivray, John, Ballachroan, Kingussie
1883 MacGillivray, Murdoch Norman, Eoligary, Barra, Lochmaddy
1876 MacGillivray, Wm., Eoligary, Barra, Lochmaddy
1877 M‘Gowan, Robert, 2 Peel Terrace, Edinburgh
1870 M‘Gowan, Wm., 2 Peel Terrace, Edinburgh
1882 M‘Gregor, Alex., Easter Culmore, Gargunnoch, Stirling
1879 M‘Gregor, Alex. (Harrison, M‘Gregor, & Co.), Leigh, Lancashire
1877 M‘Gregor, Arch., Glenlyon House, Aberfeldy
1882 Macgregor, Athole, Eastwood, Dunkeld
1872 M‘Gregor, Donald, Ballinluig
1870 M‘Gregor, Donald, Royal Hotel, Edinburgh
1883 Macgregor, Donald, Solicitor, Oban
1857 Macgregor, Donald R., Merchant, Leith
1874 M‘Gregor, James G., Fearn, Ross-shire
1861 M‘Gregor, John, Ladywell, Dunkeld
1878 M‘Gregor, John B., Curroch Farm, Crieff
1874 MacGregor, P. Comyn, of Brediland, Lonend House, Paisley
1878 M‘Gregor, Robert, Belridding, Dumfries
1874 M‘Gregor, Roderick, of Brae Rannoch, Kincraig, Kingussie
1865 MacGregor, Thomas, Kingsmills Road, Inverness
1870 M‘Haffie, Wm. J., of Torhousemuir, Wigtown
1872 M‘Illraith, James, 182 Hope Street, Glasgow
1871 M‘Illraith, Thomas, Barwhanny, Kirkinner
1878 M‘Ilwrick, Alex., Union Bank, Barrhill
1872 M‘Indoe, James, Glenmolachan, Luss
1864 MacIndoe, Robert, Merkins, Alexandria
1865 M‘Innes, Duncan, of Cowden, Comrie, Crieff
1827 M‘Inroy, Lieut.-Colonel William, of The Burn, Brechin
1852 M‘Intosh, Lieut.-Gen., of Campsie, K.H.
1879 M‘Intosh, George, S.S.C., 87 George Street, Edinburgh
1878 M‘Intosh, James, Boatlands, Coupar-Angus
1878 M‘Intosh, Dr, Professor of Civil and Natural History, St Andrews
1881 M‘Intire, William, Mount Stuart, Rothesay
1875 MacIntyre, Daniel, Dunallan, Rothesay
1861 MacIntyre, Donald, Tighnablair, Comrie
1875 MacIntyre, Peter Brown, Mains of Findon, Dingwall
1875 M‘Intyre, Robert, St Martins, Conan Bridge
1844 MacIntyre, J., Lochvoil Cottage, Oban
1857 M‘Isaac, John, late Dunglass, Campbeltown
1879 M‘Isaac, John, Brae of Monzie, Crieff
1850 M‘Iver, Evander, Scourie House, Lairg

Admitted
1877 Mackay, Alex. Forbes, of Blackcastle, Carskey House, Campbeltown
1881 M‘Kay, Allan, Cross Arthurlie, Barrhead
1878 Mackay, Arch. M., Bruchag, Rothesay
1878 Mackay, David, Hurkledale, Cummertrees, Annan
1872 Mackay, George G., Grangemouth
1879 Mackay, George Grant, of Glengloy, Kingussie
1877 Mackay, Henry, Shandwick Mains, Nigg, Ross-shire
1870 Mackay, H. M. S., Banker, Elgin
1882 Mackay, John, of Herriesdale, Dalbeattie
1872 Mackay, John S., Banker, Grangemouth
1870 Mackay, R. J., Burgie Lodge, Forres
1874 Mackay, Wm., Melness, Princes Street, Thurso
1877 M‘Kay, William, Brucefield, Portmahomack, Ross-shire
1875 Mackay, Thomas, Easter Moy, Arcan, Beauly
1857 M‘Kean, Robert, Lumloch, Bishopbriggs
1880 M‘Keand, P., yr. of Airlies, Scour, Bunnessan, Mull
1855 M‘Kechnie, Neil, Dunoon
1854 Mackechnie, James, Dalmore House, Oban
1869 Mackechnie, James, jun., Dalmore House, Oban
1881 M‘Keich, John, Upper Balliard, Balfron, Stirling
1878 M‘Kellar, John, Kilinan, Bowmore, Islay
1878 Mackellar, Peter, Crossaig, Kintyre, Tarbert
1880 Mackenzie, Allan R., yr. of Kintail, Muirton House, Inverness
1862 MACKENZIE, Sir Alexander M., of Delvine, Bart., Dunkeld
1846 Mackenzie, A., of Scatwell, 19 Charlotte Square, Edinburgh
1869 Mackenzie, A. Kincaid, of Ravelrig, Currie
1875 Mackenzie, Alex., Silverwells, Inverness
1878 Mackenzie, Alex., Tomich, Beauly
1872 Mackenzie, Andrew, Dalmore Distillery, Alness
1879 Mackenzie, A. D. (Mackenzie & Moncur), Upper Grove Place, Edinburgh
1869 Mackenzie, C. J., of Portmore, Eddleston
1883 Mackenzie, Colin Lyon, of St Martins, Braelangwell, Dingwall
1844 Mackenzie, Daniel, jun., Merchant, Glasgow
1882 Mackenzie, Donald, Glenloy, Fort-William
1846 MACKENZIE, Sir Evan, of Kilcoy, Bart.
1882 Mackenzie, Felix Calvert, Forres
1870 Mackenzie, James, Camden Quay, Cork
1865 Mackenzie, James Fowler, of Allangrange, Munlochy
1868 Mackenzie, Major James Dixon, of Findon, Mountgerald, Dingwall
1838 MACKENZIE, Sir James J. R., of Scatwell, Bart.
1871 Mackenzie, James T., of Kintail and Glenmuick, Ballater
1848 Mackenzie, John, New Club, Edinburgh
1865 Mackenzie, John, Duchlage, Cove, Greenock
1872 Mackenzie, John, of Knipoch, Oban
1853 Mackenzie, Jn. Munro, of Morinish, Garrion Tower, Wishaw
1879 Mackenzie, John, W.S., 16 Royal Circus, Edinburgh
1848 Mackenzie, John Ord, of Dolphinton, W.S., 9 Hill Street, Edinburgh

Admitted
1821 Mackenzie, John Whitefoord, W.S., 16 Royal Circus, Edinburgh
1854 MACKENZIE, Sir K. S., of Gairloch, Bart., Conan House, Dingwall
1879 Mackenzie, Murdo, Banker, Tain
1879 Mackenzie, Neil, Northfield, West Plean, Stirling
1874 Mackenzie, Nigel Banks, British Linen Bank, Fort-William
1838 Mackenzie, Robert D., of Caldarvan, Alexandria
1865 Mackenzie, Roderick G., of Flowerburn, Fortrose
1846 Mackenzie, Thomas, of Ord, Beauly
1888 Mackenzie, William, Delny, Delny Station, Ross-shire
1883 Mackenzie, William, Kinnairdie, Dingwall
1857 M'Kerral, A., Brunerican, Campbeltown
1882 M'Kerrell, Robert Muir, of Hillhouse, Dundonald, Ayrshire
1874 M'Kerrow, And., Auchenskeoch, Southwick, Dumfries
1876 M'Kerrow, M. S., Boreland of Southwick, Dumfries
1878 M'Kersie, James, Cunningham House, Muirkirk
1882 Mackessack, Charles G., Cloves, Elgin
1865 Mackessack, Charles, Culblair, Fort-George Station
1882 Mackessack, George R., yr. of Ardgye and Roseisle, Forres
1865 Mackessack, James, Earnside, Forres
1857 Mackessack, John, Balnaferry, Forres
1874 Mackessack, John, Kinloss, Forres
1882 Mackessack, Peter Hardy, Wester Folds, Elgin
1864 Mackessack, Robert, of Ardgye and Roseisle, Forres
1882 Mackessack, Robert Hardy, Newton of Struthers, Forres
1874 Mackie, Alex., Bandeath, Stirling
1875 M'Kie, Andrew, Blaiket, Crocketford, Dumfries
1860 Mackie, George, of Dunjarg, Castle-Douglas
1873 Mackie, James H. J., Invermay, Bridge of Earn
1869 Mackie, James, Lewes, Fyvie
1864 Mackie, James Logan, Ravelston, Great Western Road, Glasgow
1860 Mackie, John, Sarkshields, Ecclefechan
1878 M'Kie, John, of Bargalie, Castle-Douglas
1882 Mackie, John, of Auchencairn, Castle-Douglas
1881 Mackie, Peter, East Kirkton, Auchterarder
1857 Mackie, Robert, Draffen House, Stewarton
1871 Mackie, William, Petty, Fyvie
1879 Mackill, John (Laidlaw & Co.), 29 Waterloo Street, Glasgow
1818 Mackinlay, John, Whitehaven
1869 M'Kinlay, John, Hardhill, Bathgate
1878 Mackinlay, William, Ardoch, Cardross
1869 M'Kinnel, J. B. A., Dumfries Iron Works, Dumfries
1878 M'Kinnel, William, Butterhole, Buittle, Dalbeattie
1869 Mackinnon, Lachlan, jun., Advocate, Aberdeen
1876 Mackinnon, Wm., of Loup, Clachan, Kintyre
1888 Mackintosh of Mackintosh, Moy Hall, Inverness
1866 Mackintosh, C. Fraser, of Drummond, M.P., Inverness

Admitted
1846 Mackintosh, Æneas, of Balnespick, Inverness
1844 Mackintosh, Æneas W., of Raigmore, Inverness
1844 Mackintosh, A., of Holme, Inverness
1868 Mackintosh, C. H. of Dalmunzie, Perthshire), M.D., Morden Hall, Torquay
1846 Mackintosh, George Gordon, Richmond House, Twickenham, Middlesex
1883 Mackintosh, Bailie Hugh, Nairn
1869 Mackintosh, James, of Lamancha, Lamancha
1877 Mackintosh, John, South Kanrara, Aviemore
1854 Mackintosh, R. T., Seedsman, 10 Melbourne Place, Edinburgh
1874 M'Kirdy, Major-General D. Elliot (of Lethem, Lanarkshire), New Club, Edinburgh
1860 M'Knight, Alexander, London
1856 Maclachlan, Alexander, late Carleith, Duntocher
1873 M'Lachlan, Archd., 32 Queen Street, Stirling
1875 M'Lachlan, Colin, Drums, Greenock
1873 M'Lachlan, Colin, Woodend, Helensburgh
1874 M'Lachlan, D., Lochgilphead
1872 Maclachlan, James, Doune Lodge, Burn of Cambus, Stirling
1862 Maclachlan, W. A., of Auchentroig, Balfron
1876 Maclae, Alex. Crum, of Cathkin, Carmunnock
1853 Maclagan, D., M.D., Prof. of Medical Jurisprudence, University of Edinburgh, 28 Heriot Row
1847 Maclagan, Peter, of Pumpherston, M.P., Clifton Hall, Ratho
1873 Maclagan, Robert Craig, M.D., 5 Coates Crescent, Edinburgh
1849 Maclaine, George, 6 Albert Drive, Crosshill, Queen's Park, Glasgow
1847 Maclaine, Hugh, Glenrisdell, Tarbert, Kintyre
1870 MacLaine, Murdoch G., of Lochbuy, Oban
1855 Maclanachan, James, Van Diemen's Land
1881 M'Laren, Alexander, 11 Assembly Street, Leith
1879 M'Laren, Charles, Cally Lodge, Dunkeld
1853 M'Laren, Duncan, Newington House, Edinburgh
1873 M'Laren, James, Little Sauchie, St Ninians
1871 M'Laren, James, Solicitor, Crieff
1873 M'Laren, John, Craggish, Comrie
1858 M'Laren, John, Retreat House, Scone, Perth
1859 M'Laren, John, Brae of Monzievaird, Crieff
1880 M'Laren, John, Midland Engine Works, Hunslet, Leeds
1859 M'Laren, Joseph (late Greenhead of Arnot, Kinross), Australia
1879 M'Laren, William, Pittindrigh, Meikleour
1876 M'Larin, Dugald, Dalbeattie
1875 M'Latchie, William, Ballygreggan, Campbeltown
1877 M'Lean, Alex. T., of Ardgour, Fort-William
1875 M'Lean, Arch. John, of Pennycross, Carsaig, Pennyghael, Oban
1875 Maclean, Chas., Milton, South Uist, Lochmaddy
1838 Maclean, Colin, of Lagan, Islay

Admitted
1861 Maclean, Duncan, Bellnollow, Crieff
1854 Maclean, H. F., W.S., 3 Hill Street, Edinburgh
1878 Maclean, Hugh, of Dunbae and Farenlure, Stranraer
1878 M'Lean, James, Auctioneer, Annan
1860 Maclean, James, Clerk of Supply, W town
1881 Maclean, J. Grant, Stockbroker, Stirling
1823 Maclean, Dr Lachlan, Columba Cottage, Oban
1846 Macleay, Alex. D., Conservative Club, London
1839 Macleay, Kenneth, 1 Portland Place, London, W.
1875 M'Leish, Dan., Bank of Scotland, Fort-William
1881 M'Leish, Dan., Wester Keillor, Methven, Perthshire
1877 MacLeish, G. S., Wester Drumartherty, Spittalfield, Dunkeld
1882 Macleish, John, Sunnylaw, Bridge of Allan
1880 MacLeish, William, Town-Clerk, Perth
1871 Maclellan, David, of Marks, Kirkcudbright
1883 M'Lellan, Robert, 3 Clairmont Gardens, Glasgow
1857 Maclelland, T., North Balfern, Kirkinner
1875 MacLennan, Alex., Leanassie, Lochalsh
1865 MacLennan, Donald, Hilton, Muir of Ord
1864 MacLennan, John, Fearnaig, Strome Ferry
1849 Macleod, John N., Banker, Kirkcaldy
1839 Macleod, Norman, of Macleod, Dunvegan Castle, Isle of Skye
1854 Macleod, R. B. Æneas, of Cadboll, Invergordon Castle, Invergordon
1865 Macleod, W. A., Hawthorn Cottage, Portree
1875 Macleod, Captain, of Orbost, Skye
1874 M'Master, Allen, Glenhead House, Stranraer
1871 M'Master, Hugh Blairbuie, Port William
1878 M'Master, Jas., Currochtree, Stranraer
1875 M'Master, John, Culhorn Mains, Stranraer
1875 M'Master, Wm., Challoch, Dunragit
1883 MacMillan, E. H., Caledonian Bank, Inverness
1870 M'Millan, John, of Glencrosh, Moniaive
1861 MacMillan, J. G., Dereel House, Barns Park, Ayr
1854 M'Minn, F., 1 Graham Street, Edinburgh
1870 M'Monies, James, Manor Farm, Leighton Buzzard, Beds
1882 MacMoran, Robert, Kinlochspelvie, Lochbuy
1872 M'Murrich, James, Stuckievullich, Arrochar
1873 M'Murrich, Peter, Burnside. Alva
1865 M'Nab, Alex., of Techmuiry, Middletonkerse, Menstrie
1873 M'Nab, Donald, Duchlage, Luss
1873 M'Nab, James, Glenochil House, Menstrie
1872 M'Nab, John, Hotel, Arrochar
1873 M'Nab, John, Bracklin, Callander
1879 M'Nab, R. W., Union Bank of Scotland, Dalbeattie
1882 M'Nab, Robert, Farmer and Innkeeper, Luss
1865 Macnaughton, Steuart, of Invertrossachs, Bitterne Manor House, Southampton
1857 M'Nair, James, Smerby, Campbeltown

Admitted
1857 M'Nair, John, 33 Moray Place, Edinburgh
1876 M'Nair, Robert, Westertown, New Kilpatrick
1857 M'Naughton, Alex., Remony, Kenmore
1859 M'Naughton, Alex., Tirarthur, Killin
1870 M'Naughton, Daniel, 79 Mark Lane, London, E.C.
1854 M'Naughtou, J., of Smithfield, Ayr
1871 M'Naughton, John, Inverlochlairg, Balquhidder
1879 M'Naughtan, Robert, Inverardran, Crianlarich, Stirling
1871 M'Naughton, Wm., Riechip, Dunkeld
1848 Macneal, H., of Ugadale, Campbeltown
1882 M'Neilage, Arch., jun., Secretary, Clydesdale Horse Society, 194 St Vincent Street, Glasgow.
1870 M'Nelie, Alex., Redcastle, Dalbeattie
1846 M'NEILL, Right Hon. Sir John, G.C.B., Burnhead, Liberton
1860 M'NEILL, Maj.-Gen. Sir John Carstairs, of Colonsay, V.C., K.C M.G., K.C.B.
1873 M'Nicol, John, Garvie, Glendaruel
1876 M'Nicol, John, Salachael, Fasnacloich, Appin
1857 M'Niven, Alex., Inneshewan, Killin
1876 Maconchy, John Arthur, Corrinagh, Torquay—*Free Life Member*
1877 Maconochie, John Allan, Gattonside House, Melrose
1852 Maconochie, Robert Blair, of Gattonside, Melrose, W.S., 10 Hill Street, Edinburgh
1857 M'Phail, Alex., America
1882 M'Phail, John, Scallasdale, Craigmore, Mull
1878 MacPhedran, J. M., of Craigbet, Bridge of Weir
1878 Macpherson, Allan, of Blairgowrie
1878 Macpherson, Charles J. Brewster, of Belleville, Kingussie
1871 MacPhersou Donald, Glen Nevis, Fort-William
1875 M'Pherson, Donald, Auburn Cottage, Pollokshields
1876 M'Pherson, Donald, Queen's Hotel, Rothesay
1883 Macpherson, Donald, Wolfelee, Hawick
1865 Macpherson, Duncan, Kingussie
1827 Macpherson, Ewen, of Cluny Macpherson, C.B., Cluny Castle, Kingussie
1862 Macpherson, George G., Brodie Cottage, Forres
1883 Macpherson, James, Maam, Inveraray
1876 Macpherson, John, Achlochrach, Glenrinnes, Dufftown
1883 Macpherson, John, Aylesmore House, St Bridvals, Lydney
1856 Macpherson, John, Blantyre Farm, Glasgow
1857 Macpherson, J., Lord Chamberlain's Office, London
1860 Macpherson, J. (late Killihuntly, Kingussie), Ontario, Canada
1870 Macpherson, Colonel Lachlan, of Glentruim, Newtonmore
1871 Macpherson, Lauchlan, Laggan, Crieff
1882 M'Pherson, Prof. Norman, LL.D., 2 Randolph Cliff, Edinburgh
1882 M'Queen, David, Factor, Wishaw Estate, Wishaw
1857 M'Queen, J., of Boquhapple, Thornhill, Stirlingshire
1870 M'Queen, James, of Crofts, Dalbeattie
1873 Macqueen, James, Divers Wells, Alloa
1879 Macqueen, Jas., Salutation Coach Office, Perth
1879 M'Queen, John, Oakwood, Selkirk

Admitted
1883 MacRae, A. D., Ruthven, Kingussie
1850 Macrae, Don., 155 Hill Street, Garnet Hill, Glasgow
1874 Macrae, Dun. A., of Monar, Muirton House, Inverness
1874 MacRae, Rod., Mains of Erchless, Beauly
1878 M'Raw, Donald, Balnacraig, Fortingall
1868 M'Robbie, Peter, Sunnyside, Aberdeen
1871 M'Rosty, Jas., Solicitor, Crieff
1879 MacRitchie, David, C.A., 4 Archibald Place, Edinburgh
1876 M'Taggart, John, Culnaightry, Castle-Douglas
1857 M'Tavish, Duncan, America
1848 Mactier, Alexander Walker, late of Durris, Aberdeen
1878 M'Tier, John, of Ladyfield, Netherwood, Dumfries
1880 M'Turk, Alex., Commercial Hotel, Sanquhar
1878 M'Turk, David, Rascarrel, Castle-Douglas
1878 M'Turk, William A., Barlae, Dalry, Galloway
1877 M'Vicar, Archd., Woodend, Bathgate
1828 Macvicar, Rev. J. G., D.D., Moffat
1878 M'Whinnie, Alex., Airyolland, Port-William
1876 M'William, Mrs, Bucharn, Huntly
1876 M'William, James, Stoneytown, Boharm, Keith
1870 M'William, Robt., Craichmore, Stranraer
1881 Mack, Joseph, of Berrybank, Reston
1839 Madden, Henry R., M.D , Australia
1882 Maddever, Dr John Coombe, 19 Battery Place, Rothesay
1875 Maddison, Henry, The Lindens, Darlington
1870 Main, Geo. Agnew, Portland Square, Carlisle
1874 Main, Jas. A R. (A. & J. Main & Co.), Hope Street, Glasgow
1879 Main, R. R. (A. & J. Main & Co), Possil Park, Glasgow
1877 Maitland, David, of Dundrennan, Kirkcudbright
1871 Maitland, Henry, Mount Æolus, Portobello
1858 Maitland, James, jun., Little Methlick, Methlick
1867 MAITLAND, Sir James Ramsay Gibson, of Barnton, Bart., Craigend House, Stirling
1879 Maitland, Col. Keith Ramsay, H.M.I.S. 26 Castle Terrace, Edinburgh
1875 Maitland, Robert, Balhalgardy, Inverurie
1858 Maitland, Wm., Alton of Coynach Mintlaw
1883 Maitland, William, Muirtown, Old Meldrum
1869 Malcolm, George, Factor, Invergarry
1876 Malcolm, Wm., Carsaig, Mull
1840 Malcolm, W. E., of Burnfoot, Langholm
1878 Malcolm, William Maitland, Carsaig, Pennyghael
1880 Malcolm, Wm. Taylor, Dunmore, Stirling
1880 Mangin, W. N., Catslackburn, Yarrow, Selkirk
1861 Mangles, George, Givendale, Ripon, Yorkshire
1882 Mann, Alex., Ballintomb, Grantown
1882 Mann, Robert J., Skelton, Boroughbridge
1882 Mann, William, S.S.C., 119 Princes Street, Edinburgh

Admitted
1883 Manners, C. R., C.E., Inverness
1840 MANSEL, Sir John, Bart., Maestello, Llandilo, Carmarthenshire
1833†MANSFIELD, Right Hon. the Earl of, K.T., Scone Palace, Perth
1869 Mansfield, Jas. L., Advocate, 8 Chester Street, Edinburgh
1872†MAR and KELLIE, Right Hon. the Earl of, Alloa Park, Alloa
1854 MARJORIBANKS, Sir John. of Lees, Bart., Coldstream
1856 Marjoribanks, John, Camptoun, Drem
1854 Marjoribanks, Wm., 9 Learmonth Terrace, Edinburgh
1877 Mark, John, Craigend, Stow
1877 Mark, Robert, Agricultural Hall, Leven Street, Edinburgh
1876 Marr, John, Cairnbrogie, Old Meldrum
1864 Marr, J. A., late of Alderston, Mid-Calder
1882 Marr, Thomas, Land Steward, Kennet, Alloa
1855 Marr, Wm. Smith, Upper Mill, Tarves
1873 Marryat, George Selwyn, Shedfield Grange, Botley, Hants
1882 Marshall, Francis, of Park, Girvan, Ayrshire
1868 Marshall, James (Marshall Sons, and Co.), Gainsborough
1847 Marshall, John, Clebrig, Lairg
1877 Marshall, John (Alexander Jack & Sons), Maybole
1880 Marshall, John, Sandyford, Holytown
1880 Marshall, Rev. Theodore, Caputh Manse, Dunkeld
1860 Marshall, Thomas, The Howes, Annan
1879 Marshall, Walter, of Lochmaloney, Cupar Fife
1872 Marshall, Wm. Hunter, of Callender, 25 Heriot Row, Edinburgh
1875 Martin, Donald T., Auchendennan, Bonhill
1877 Martin, Edward, 11 Keir Terrace, Glasgow
1858 Martin, James, Springbank Terrace, Aberdeen
1879 Martin, Jas., Priestfield, Pitlessie, Ladybank
1875 Martin, John, Ardnahoe, Rothesay
1874 Martin, John, Beechwood Mains, Corstorphine
1858 Martin, John, Parkhead Villa, Perth
1865 Martin, John, Docharn, Boat of Garten, Strathspey, Inverness-shire
1867 Martin, John M., of Auchendennan, Bloomhill, Cardross
1854 Martin, Dr N., of Glendale, Dunvegan
1878 Martin, Thos., Muiryhill, Thornhill
1880 Martin, William, Dardarroch, Dumfries —*Free Life Member*
1878 Martin, Wm., Larbrax, Stranraer
1878 Martin, Wm., Town Clerk, Dumfries
1859 Mason, Robert, of Corstorphine Hill, Corstorphine Hill House, Corstorphine
1889 Masson, Rev. Alex., The Manse, Kirkliston
1874 Masson, John, Tobermory
1874 Masson, John, Mill of Cammie, Banchory
1875 Mather, Edward, The Lee, Edinburgh
1874 Mather, John Arres, Delnies, Nairn
1873 Mather, Wm., Kirkhill, Newton Mearns
1846 Matheson, Sir Alex., of Ardross, Bart., M.P., Ardross Castle, Alness
1878 Matheson, Daniel, Commercial Bank, Lockerbie
1871 Matheson, Kenneth, Dunfermline
1858 Mathews, N., Whitehills, Garliestown

Admitted
1878 Matthews, Andrew Baird, British Linen Bank, Newton-Stewart
1871 Matthew, P. M., 32 Coates Gardens, Edinburgh
1877 Maxwell, Captain Alfred R. Constable, of Terregles, Dumfries
1870 Maxwell, Captain Heron, yr. of Springkell, Ecclefechan
1861 Maxwell, Edward Heron, of Teviotbank, Hawick
1865 Maxwell, Francis (of Gribton, Dumfries), Balgone, North Berwick
1873 Maxwell, George, of Broomholm, Langholm
1878 Maxwell, George, of Glenlee, New Galloway
1838 MAXWELL STUART, Hon. Henry Constable, of Traquair, Innerleithen
1877 MAXWELL, Sir Herbert Eustace, of Monreith, Bart., M.P., Whauphill, N.B.
1878 Maxwell, James, Screel, Castle-Douglas
1880 Maxwell, John, Coachbuilder, Kelso
1839 MAXWELL, Sir John H., of Springkell, Bart., Ecclefechan
1882 Maxwell, Joseph, Seedsman, Thornhill
1867 Maxwell, Maxwell Hyslop, of The Grove, Dumfries
1869 Maxwell, General Harley, of Portrack, Dumfries
1879 Maxwell, Wellwood, of Kirkennan, Dalbeattie
1839 Maxwell, Wellwood H., of Munches, Dalbeattie
1878 Maxwell, W. J., Terregles Banks, Dumfries
1881 Maxwell, William, Baraskomel, Campbeltown
1841 MAXWELL, Sir W., of Cardoness, Bart., Gatehouse
1882 Maxwell, Sir William, of Calderwood, Bart., Blantyre
1875 Maxwell, William Hall, of Dargavel, Bishopton
1873 Maxwell, Wm. Jardine, yr. of Munches, Terraughtie, Dumfries
1879 Meade-Waldo, E. W. Stonewall, Eden Bridge, Kent
1875 Mearns, Rev. Duncan G., Oyne Manse, Aberdeenshire
1859 Mears, Wm., 24 Buccleuch Street, Edinburgh
1875 Meek, John, Flesher, Whitburn
1854 Meikle, David, 10 Kirk Wynd, Falkirk
1858 Meikle, James, Nether Mains, Kilwinning
1867 Meikle, John, Grougfoot, Linlithgow
1869 Meikle, Wm., East Breich, West Calder
1879 Meikle, Wm., East Bonhard, Linlithgow
1861 Mein, Andrew Whytock, of Hunthill, Jedburgh
1863 Mein, Ben., Roxburgh Barns, Kelso
1860 Mein, N. A., Hotel de Emperoure, Boulevard, Dubanchago, Nice
1880 Meldrum, D. B., of Kincaple, St Andrews
1859 Meldrum, J., of Eden Bank, Pittormie, Cupar Fife
1854 Melrose, Jonathan, Coldstream
1869 Melrose, Patrick, West Loch, Eddleston
1882 Melville, John H., Eriden, Falkirk
1819 Melville, J. Whyte, of Bennochy, Mount Melville, St Andrews
1877 Melvin, Alexander R., Bonnington, Wilkieston
1862 Melvin, Chas., Penston, Tranent
1849 Melvin, Jas., Bonnington, Wilkieston
1863 Menzies, Duncan, C.E., 39 York Place, Edinburgh
1844 Menzies, Duncan, Blairech, Lairg
1875 Menzies, Fergus J., Blackhall, Dunfermline

Admitted
1811 Menzies, Fletcher Norton, Edinburgh—*Secretary of the Society*
1879 Menzies, James, Coshieville, Aberfeldy
1869 Menzies. James, of Pitnacree, M.D Ballinluig
1874 Menzies, John, Lochiel Arms Hotel, Banavie, Fort-William
1870 Menzies, John, Bankhead, Duns
1849 Menzies, J. A. Robertson, Dunalastair, New Zealand
1877 Menzies, Neil James, yr. of Menzies, Scots Guards
1841 MENZIES, Sir Robert, of Menzies, Bart., Farleyer, Aberfeldy
1871 Menzies, Robt., S.S.C., 5 North St David Street, Edinburgh
1879 Menzies, Robert, Tirinie, Aberfeldy
1881 Menzies, R. Stewart, of Pitcur, Hallyburton House, Coupar-Angus
1865 Menzies, Wm., Keilator, Killin
1880 Menzies, W. G. Stuart, of Culdares, Perthshire
1870 Menzies, Wm. J., W.S., 123 George Street, Edinburgh
1859 Mercer, Græme R., of Gorthy, Glen Tulchan, Perth
1861 Mercer, John, Arduadam, Dunoon
1870 Merricks, H. J., 1 Elgin Terrace, Partick, Glasgow
1870 Merricks, J. L., Gunpowder Mills, Roslin
1870 Merricks, William, 188 Buchanan Street, Glasgow
1872 Merrilees, Robert, 19 Hope Street, Glasgow
1875 Merson, James, Craigwillie, Huntly
1873 Michael, James, late 5 Mackenzie Place, Angle Park, Edinburgh
1867 Michie, C. Y., Forester, Cullen House, Cullen
1881 MIDDLETON, Lord, Birdsall, York
1876 Middleton, Alex., Belmont, Aberdeen
1875 Middleton, A. A., Rosefarm, Invergordon
1864 Middleton, Geo., Cornton, Dingwall
1872 Middleton, Jonathan, Davidston, Invergordon
1872 Middleton, Jonathan, Clay of Allan, Fearn, Tain
1873 Mill, Allan, Dods, Lauder
1882 Mill, George, 5 Thistle Street, Edinburgh
1853 Millar, C. H., of Blair Castle, 5 Palmerston Place, Edinburgh
1881 Millar, David, Coachbuilder, Crieff
1877 Millar, James, of Waulkmill, Dunfermline
1864 Millar, James, Mills of Torr, Blair-Drummond
1878 Millar, Robert, Alloway Cottage, Ayr
1871 Millar, Wm., Over Kinfauns, Perth
1843 Miller, Captain Alexander Penrose
1873 Miller, Colin W., Wellwood, Bridge of Allan
1868 Miller, G. J., of Frankfield, Glasgow
1861 Miller, George, Flawcraig, Errol
1853 Miller, Hew, Westerton, Ochtertyre, Crieff
1861 Miller, John, Scrabster, Thurso
1874 Miller, John, Seafield, Cullen
1879 Miller, John, Lochland, Crieff
1843 Miller, O. G., of Pittendriech, Dundee
1873 Miller, Thomas, of Myres, St Ninians
1864 MILLER, Sir Wm., of Manderston, Bart., Duns
1879 Miller, Wm., Pond Cottage, Whitehouse, Aberdeenshire
1877 Millican, John, Wedholm House, Abbey Town, Carlisle
1870 Millie, George, Kilmaron, Cupar Fife
1878 Milligan, James, Hayfield, Thornhill

Admitted
1870 Milligan, John, Merkland, Dunscore
1859 Mills, G., Glenmona Park, Bung Bong, Victoria
1857 Mills, George, Elm Bank, Melrose
1858 Milne, A., Corse of Kinnoir, Huntly
1883 Milne, Alexander, 32 Hanover Street, Edinburgh
1855 Milne, Alex., Mill of Allathan, Udny
1856 Milne, J., Netherton of Pittendrum, Fraserburgh
1856 Milne, J., Union Bank, Helensburgh
1859 Milne, Jas. (late Meinfoot, Ecclefechan), America
1862 Milne, James, Banker, Huntly
1867 Milne, John, Mains of Laithers, Turriff —*Free Life Member*, 1873
1881 Milne, John, Corn Merchant, Montrose
1861 Milne, Peter, 5 Linkfield, Musselburgh
1875 Milroy, James, Galdenoch, Stoneykirk
1876 Milroy, John, Balgreggan Mains, Stranraer
1863 MINTO, Right Hon. the Earl of, Minto House, Hawick
1870 Minto, John D., Dumfries
1876 Mitchell, Alex., Balgreen, King Edward
1851 Mitchell, Alex., of Sauchrie, Maybole
1857 Mitchell, A., Tillicoultry House, Alloa
1870 Mitchell, Alexander, Implement Maker, Peterhead
1848 Mitchell, Andrew, Alloa
1874 Mitchell, Andw., Drumderfit, Inverness
1875 Mitchell, Andw., Ratagan House, Lochalsh
1878 Mitchell, Andrew, Barcheskie, Kirkcudbright
1861 Mitchell, David, late Burnton, Laurencekirk
1857 Mitchell, Duncan, Darroch, Luss
1877 Mitchell, George, Broxburn Park, Broxburn
1877 Mitchell, Hugh, Banker, Pitlochry
1851 Mitchell, James, Dologan, Aberystwith
1879 Mitchell, James, Merchant, Montrose
1874 Mitchell, James R., Drynie, Inverness
1857 Mitchell, J., Homeston, Campbeltown
1864 Mitchell, James, Banker, Pitlochry
1850 Mitchell, J., Ballemenach, Campbeltown
1878 Mitchell, James, Aldie Castle, Kinross
1873 Mitchell, John, jun., Boreland, Hutton, Lockerbie
1861 Mitchell, John, Fliskmiln, Cupar Fife
1876 Mitchell, John, Lairshill, Summerhill, Aberdeen
1872 Mitchell, John, Knockhouse, Dunfermline
1836 Mitchell, Joseph, Civil Engineer, View Hill, Inverness
1878 Mitchell, Joseph, Bankhead, Dalswinton, Dumfries
1870 Mitchell, Joseph M., Burnscairth Green, Dumfries
1859 Mitchell, Robert, Brewer, 3 Bonnygate, Cupar Fife
1850 Mitchell, S., Dalivaddy, Campbeltown
1880 Mitchell, Thomas, Middlestead, Selkirk
1874 Mitchell, William, North Ossemsley, Lymington, Hants
1876 Mitchell, William, Mains of Biffie, Old Deer
1862 Mitchell, Wm., Merchant, Montrose
1869 Mitchell, Wm., S.S.C., 15 Magdala Crescent, Edinburgh
1863 Mitchell, Wm., Ribigill, Tongue, Sutherlandshire
1881 Mitchell, William, Auchlochie, Fearn, Brechin
1868 Mitchell, Wm. A., Auchnagathel, Keig, Aberdeen
1849 Mitchell, W. G., of Carwood, Biggar

Admitted
1861 Moffat, George, Roseland, Partick, Glasgow
1860 Moffat, James, Gateside, Kirkconnel, Sanquhar
1867 Moffat, James, of Kenervie, British Linen Bank, Castle-Douglas
1869 Moffat, James, Kirklinton Park, Kirklinton, Carlisle
1862 Moffat, Thomas, Drumbuie, Sanquhar
1881 Moffat, Wm., General Manager, Great North of Scotland Railway, Aberdeen
1881 Moir, Alexander, Nether Carse, Gargunnock, Stirling
1871 Moir, James, late Banker, Alloa
1858 Moir, James, Mains of Wardhouse, Insch, Aberdeen
1873 Moir, James M'Arthur, of Hillfoot, Dollar
1876 Moir, Peter, Nottingham Place, Edinburgh
1876 Moir, William, Nottingham Place, Edinburgh
1882 Mollison, James, Agricultural Implement Maker, Ruthven, Meigle
1873 Mollison, James, Factor, Dochgarroch Lodge, Inverness
1848 MONCREIFF, Right Hon. Lord, of Tulliebole, Lord Justice-Clerk, 15 Great Stuart Street, Edinburgh
1842 Moncrieff, Alexander, W.S., Perth
1852 Moncrieff, Lt.-Col. Alexander, of Barnhill, Perth
1866 Moncrieff, David Scott, W.S., 24 George Square, Edinburgh
1878 Monilaws, Rev. James John, Middlebie Manse, Ecclefechan
1833 Monro, A. B., of Auchenbowie, Stirling
1851 Monro, David, of Allan, Tain
1846 Monteith, B., Tower Mains, Liberton
1867 Monteith, Robert, of Carstairs
1882 Mongomerie, Robert, Lessnessock, Ochiltree, Ayrshire
1878 Montgomerie, And., of Netherhall, Castle-Douglas
1843 MONTGOMERY, Sir G. Graham, of Stanhope, Bart., Stobo Castle, Stobo—*Honorary Secretary of the Society*
1882 Montgomery, Henry James, of Hattonburn, Milnathort
1879 Montgomery, John, Comstonend, Kirkcudbright
1846 Montgomery, John B. H., of Newton, Stobo Castle, Stobo
1873 Montgomery, Wm., jun., Parkend Farm, Helensburgh
1878 Montgomery, William, Banks, Kirkcudbright
1876†MONTROSE, His Grace, the Duke of, Buchanan Castle, Glasgow
1839 Moore, John C., of Corsewell, Stranraer
1852†Moray, Chas. Stirling Home Drummond, of Blair-Drummond, Abercairney, Crieff
1869 Moray, Lieut.-Col. H. D., yr. of Blair-Drummond, Stirling
1876 More, John, Fordhead, Kippen, Stirling
1868 Morgan, David, South Mains of Ethie, Arbroath
1882 Morgan, James, East Gogar, Blairlogie
1882 Morries-Stirling, John Morries, Gogar House, Blairlogie
1871 Morris, William, V.S., 7 Langstane Place, Aberdeen
1878 Morrison, Bethune George Walker, of Falfield, Cupar Fife
1861 Morrison, James, Topeka, Kansas
1850 Morrison, James G., Glasgow
1862 Morrison, J. B. B., of Finderlie, Kinross
1883 Morrison, Alex., Nurseryman, Elgin

Admitted
1877 Morrison, Andrew, Broomrig, Pencaitland
1855 Morrison, Charles, of Islay, Bridgend, Islay
1858 Morrison, Harry L. L., of Blair, Aberdeen
1850 Morrison, James, Glasgow
1873 Morrison, James M., Banker, Stirling
1876 Morrison, John, junior, Hattonslap, Methlick
1859 Morrison, John, West Dalmeny, South Queensferry
1876 Morrison, Thomas, 205 Buchanan Street, Glasgow
1872 Mortimer, Thomas A., 86 George Street, Edinburgh
1880 Morton, David (Graham & Morton), Stirling
1861 Morton, J., Lambieletham, St Andrews
1881 Morton, James S., 6 St Andrew Square, Edinburgh
1875 Morton, John, Nether Abington, Abington
1879 Morton, R. G., Engineer, Errol
1859 Mosman, H., Auchtyfardle, Lanark
1882 Moubray, John James, of Naemoor, Dollar
1843 Moubray, John M., late of Hartwood
1878 Moubray, John M., Strone House, Strone, Greenock
1880 Moult, John, 41 Mosley Street, Newcastle-on-Tyne
1865 Mounsey, J. T., of Kingfield, Longtown, Cumberland
1877 Mounsey, William R., Lowther, Newton, Penrith
1867 Muckart, James, Berriedale, Dunbeath, Caithness
1879 Muckersie, Henry, Drumfin, Dunfermline
1878 Muil, James, late Grain Merchant, Alloa
1880 Muir, John, Dryhope, Yarrow, Selkirk
1873 Muir, Andrew Lees, Coal Merchant, Stirling
1852 Muir, G. W., Kirkhouse, Traquair, Innerleithen
1878 Muir, James, Lochfergus, Kirkcudbright
1843 Muir, John, late of Gartferrie
1882 Muir, John Gardiner (Anderston Foundry Co., Glasgow), Cunninghamhead House, Kilmarnock
1882 Muir, Matthew Andrew (Anderston Foundry Co., Glasgow), Ardenvohr House, Row, Helensburgh
1877 Muir, William, Lochdougan, Castle Douglas
1862 Muirhead, E. W., The Hill, Putney, Surrey
1872 Muirhead, F., Eaglescarnie Mains, Haddington
1863 Muirhead, George (late Durdie, Errol), London
1872 Muirhead, Geo., Paxton, Berwick-on-Tweed
1875 Muirhead, Thomas, Townhill Store, Dunfermline
1874 Muirhead, Wm., Auchenairn, Bishopbriggs
1873 Muirhead, William, Pirnhall, Bannockburn
1873 Munby, Edward Chas., Myton Grange, Helperby, Yorkshire—*Free Life Member*
1876 Mundell, James P., Auction Mart, Perth
1874 Mundell, John, Gorthlick Foyers, Inverness
1878 Mundell, Walter, Eilanreach, Glenelg
1881 Mundell, Walter, Moy, Muir of Ord

Admitted
1870 Mundell, Walter Grieve, Inverlael, Lochbroom, Dingwall
1864 Munro, A., Ballintraid, Invergordon
1874 Munro, Alex., Oakes Villa, Invergordon
1864 Munro, D., Milton, Fort-George Station
1877 Munro, Duncan H. Campbell, of Kenlochlaich, 7 Margaret Street, Greenock
1883 Munro, Hector, yr. of Foulis, Ardullie Lodge, Dingwall
1853 Munro, John, Fairnington, Roxburgh
1877 Munro, John, of Swordale and Limlair Dingwall
1874 Munro, John, Seedsman, Inverness
1882 Munro, Patrick, 180 West Regent Street, Glasgow
1880 Munro, William, of Marchbank, 34 St Andrew Square, Edinburgh
1879 Murdoch, Mrs, East Haughead, Uddingston
1875 Murdoch, Alex., Gartcraig, Shettleston
1865 Murdoch, George Burn, St Bride's, Morningside, Edinburgh—*Free Life Member*
1875 Murdoch, James, Carntyne, Shettleston
1874 Murdoch, James F., Hallside, Cambuslang
1853 Murdoch, John Burn, of Gartincaber, Advocate, Greenhill Lodge, Edinburgh
1875 Murdoch, John, Carntyne, Shettleston
1880 Murdoch, Peter, Househill, Larbert
1857 Murdoch, Robert, Hallside, Cambuslang
1878 Murdoch, Robert, Kilnotrie, Castle-Douglas
1856 Murdoch, William, Solicitor, Huntly
1847 MURE, Hon. Lord, 12 Ainslie Place, Edinburgh
1870 Mure, William J., Advocate, 39 Heriot Row, Edinburgh
1878 Murray, Allan, Castlemilk Mill, Lockerbie
1879 Murray, Alex., Alderston, Haddington
1828 Murray, Anth., of Dollerie, W.S., 141 George Street, Edinburgh
1881 Murray, Captain A. B., Gartur, Stirling
1880 Murray, Anthony George, C.E., 141 George Street, Edinburgh
1877 Murray, A. Graham, Advocate, 7 St Colme Street, Edinburgh
1879 Murray, Benjamin Rigby, of Parton, Castle-Douglas
1880 Murray, Lt.-Col. Chas. Stewart, Sauchie, Stirling
1879 Murray, Geo. Rigby, yr. of Parton Castle-Douglas
1871 Murray, C. A., Taymount, Stanley
1864 Murray, D., Gruinard, Poolewe
1879 Murray, David, Dunira, Crieff
1854 Murray, George, New Zealand
1865 Murray, G. R., Finniness, Castle-Douglas
1867 Murray, G., Elvaston Castle, Derby
1869 Murray, G. W., Banff Foundry, Banff
1857 Murray, James, Dumfries Arms Hotel, Cumnock
1873 Murray, James, Gartur, Stirling
1861 Murray, James, Catter House, Drymen
1879 Murray, James, Fauchfaulds, King Edward, Banff
1869 Murray, James Wolfe, of Cringletie, Peebles
1862 Murray, John L., of Heavyside, Biggar
1863 Murray, Lieut.-Col. John, of Polmaise Stirling
1873 Murray, John, Munnieston, Thornhill Stirling
1863 Murray, John, of Wooplaw, Galashiels
1878 Murray, Patrick, Strabane, Brodick

Admitted

1862 MURRAY, Sir Patrick Keith, of Ochtertyre, Bart., Crieff
1850 Murray, Robert, 62 Grove Street, Edinburgh
1858 Murray, R., 7 Roxburgh Place, Edinburgh
1874 Murray, Robert G., of Spittal, Biggar
1875 Murray, Robert W. E., Wester House Byres, Galashiels—*Free Life Member*
1857 Murray, Thomas, Braidwood, Penicuik
1852 Murray, Thomas G., W.S., 11 Randolph Crescent, Edinburgh
1856 Murray, William, Kilcoy, Kilearnan, Inverness
1858 Murray, Wm., Mains of Pittendreigh, Turriff
1879 Murray, W. G. G., Kersknowe, Kelso
1859 Mustard, Alex., Leuchland, Brechin
1876 Mutch, Alexander, Mains of Newhall, Stonehaven
1875 Mutter, John, 29 Chalmers Street, Edinburgh
1858 Myers, Geo. C., Town-Clerk, Montrose
1864 Myles, James, Deanside, Renfrew
1860 Mylne, Thos., Niddrie Mains, Liberton

1879 Nairne, Thos. Graham, Dunsinnane, Perth
1874 Nairne, William, of Dunsinnane, Perth
1843†NAPIER and ETTRICK, Right Hon. Lord, K.T., Thirlstane Castle, Selkirk
1875 Napier, John S., of Lethame, Strathaven
1848 NAPIER, Sir R. J. M., of Milliken, Bart., Johnstone, Renfrewshire
1857 Napier, Dugald, Australia
1840 Napier, George, Advocate, Sheriff of Peeblesshire, Coates Hall, Edinburgh
1872 Nares, A. F., Bructor, Old Meldrum
1870 Neilson, Joseph, Killimingan, Kirkgunzeon, Dumfries
1882 Neilson, William, of Carnoquhill-Douglas, Balfron
1867 Neilson, William, Estate Factor and Banker, Bank of Scotland, Bellshill
1871 Nelson, Charles, Skateraw, Dunbar
1865 NEPEAN, Sir M. H., of Loders Court, Bart., Bridport
1845 Newall, John, Mexico
1865 Newton, Captain Hay, of Newton, Haddington
1872 Newton, T. H. G., Barrels Park, Henley-in-Arden, Birmingham
1878 Nicholson, William Newzan, Trent Iron Works, Newark
1882 Nickels, John Tetley (Birkenhead), Corston, Coupar-Angus
1883 Nicol, James, Solicitor and Banker, Oban
1869 Nicol, W. E., (of Ballogie, Aboyne), 37 Queen's Gate, London, S.W.
1844 Nicoll, Alexander, late of Edinburgh
1867 Nicoll, T. Munro, Littleton, Kirriemuir
1857 Nicolson, James Badenach, of Glenbervie, Fordoun
1857 Nicolson, Michael Hugh Stewart, of Carnock, Ardgowan, Greenock
1873 Nimmo, Alexander, of West Bank, Falkirk
1852 Nimmo, Matt., Foot of Green, Stirling
1881 Nimmo, Thomas, Lawhead, Forth, Lanarkshire
1880 Nisbet, George, Rumbleton, Greenlaw, Berwickshire
1881 Nisbet, Hugh Craig, Barnton Dairy, Stirling
1870 Nisbet, Jas., of Lambden, Greenlaw, Berwickshire
1875 Nisbet, John, Longgreen, Newmilns, Kilmarnock
1865 Nisbet, Ralph P., 4 Dempster Terrace St Andrews
1847 Nisbett, J. M., of Cairnhill, Drum, Edinburgh
1860 Niven, Alexander, T., C.A., 6 Abbotsford Crescent, Edinburgh
1873 Nivison, Stewart, Lairdlaugh, Dalbeattie
1878 Nixon, R. L., Bonstead Hill, Burgh-by-Sands, Carlisle
1878 Nonnen, John Edward, 36 Leamington Terrace, Edinburgh—*Free Life Member*
1860 Norman, Wm., Hall Bank, Aspatria—*Free Life Member*, 1873
1880 Normand, Wm. J., Ramornie, Dysart
1862 Norie, Henry Hay, W.S., 62 George Street, Edinburgh
1882 Norrie, Wm. Cairnhill, Monquhitter, Turriff—*Free Life Member*
1867 Norris, Peter, Todholes, Fintry, Stirling
1879 North, G. F., 8 Warrington Gardens, Maida Vale, London, W.

1868 OCHTERLONY, Sir Charles Metcalfe, of Ochterlony, Bart., St Andrews
1859 Odams, James, Fenchurch Street, London
1873 Ogilvie, A. M., Tillynaught, Portsoy
1880 Ogilvie, David, Berryfauld, West Kirkton, Arbroath
1881 Ogilvie, David, jun., Nether Kelly, Arbroath
1853 Ogilvie, Wm. R., Skelton, Penrith
1860 Ogilvie, George, Holefield, Kelso
1868 Ogilvy, Donald, of Clova, Balnaboth, Kirriemuir
1870 Ogilvy, Col. James W., Rannagulzion, Blairgowrie
1824 OGILVY, Sir John, of Inverquharity, Bart., Baldovan House, Dundee
1836 Ogilvy, John, of Inshewan, 4 Church Hill, Edinburgh
1859 Ogilvy, John, Harecraig, Dundee
1874 Ogilvy, John Francis, of Corrimony, Glen Urquhart
1871 Ogilvy, Reginald Howard Alexander, yr. of Inverquharity, Millhill, Inchture
1844 Ogilvy, Lieut.-Col. Thomas W., of Ruthven, Meigle
1882 Ogston, Alex. Milne, of Ardoe, Aberdeen
1872 Oliphant, L. J., of Condie, Guards Club, London
1873 Oliphant, Thomas T., of Rossie, Queen Mary's, St Andrews
1852 Oliver, James, of Thornwood, Hawick
1883 Oliver, James, Benbuy, Inveraray
1880 Oliver, John, Borthaugh, Hawick
1853 Oliver, Robert, of Blakelaw, Lochside, Kelso
1858 Oliver, W. Elliot, Benbuy, Inveraray
1873 Oliver, Wm. M., Howpasley, Hawick
1875 Ord, John Robert, Haughton Hall, Darlington
1882 Ord, Thomas Roberts, F.C.S., 52 Lime Street, London
1858 ORDE, Sir John W. Powlett Campbell, of Kilmory, Bart., Lochgilphead
1848 Ormiston, William T., of Glenburn Hall, Jedburgh
1873 Orr, James, Hill, Whitburn
1875 Orr, James, of Harvieston, Dollar
1882 Osborne, David, Banker, Cupar Fife
1848 Oswald, James Townsend, of Dunnikier, Kirkcaldy
1870 Oswald, Richard A., of Auchencruive, Ayr
1863 Otto, Wm. E., Jedneuck, Jedburgh

Admitted
1878 Ovens, Walter, Torr House, Castle-Douglas
1876 Ovens, William R. (Thomas Ovens & Sons), Leith

1872 Panton, Patrick, of Edenbank, Kelso
1871 Panton, John, of Dalnagairn and Carsie, Blairgowrie
1873 Panton, Wm., Maryfield, Blairgowrie
1881 Park, Alexander, Factor, Gartshore, Croy, Glasgow
1874 Park, Ebenezer, Engineer, Greenside Lane, Edinburgh
1863 Park, James, Stoneyhill, Musselburgh
1881 Park, James, Dechmont, Cambuslang
1873 Park, James D., Engineer, Greenside Lane, Edinburgh—*Practical Engineer to the Society*
1866 Park, Thomas B., Springfield, Haddington
1881 Park, Walter, Hatton, Bishopton, Erskine, Renfrewshire
1874 Park, William, Brunstane, Portobello
1877 Pate, Andrew, Easter Middleton, Gorebridge
1867 Paterson, Charles, Canford Manor, Wimborne
1864 Paterson, D. A., Merchant, Leith
1870 Paterson, David J., Watch Hall, Annan
1883 Paterson, Donald, Balrobert, Inverness
1877 Paterson, George, Fallhills, Penicuik
1882 Paterson, George Frederick, of Castle Huntly, Longforgan
1877 Paterson, G. R., Drumalbin, Thankerton, Lanarkshire
1883 Paterson, James, Culaird, Inverness
1872 Paterson, Jas , Kidshielhaugh, Duns
1853 Paterson, James, Whitehouse, Lamlash, Arran
1860 Paterson, Jas., of Carmacoup, Douglas
1878 Paterson, James, of Bankton, Mid-Calder
1882 Paterson, John, Kirkton, Tyndrum
1847 Paterson, John, jun., late Kilconan, Campbeltown
1857 Paterson, John, Skirling Mains, Biggar
1862 Paterson, John, Howcleuch, Moffat
1882 Paterson, John, South Slipperfield, West Linton
1873 Paterson, John Thomas Scott, Plean Farm, Bannockburn
1877 Paterson, John, Meadowspott, Dalkeith
1877 Paterson, John, Colfin, Portpatrick
1881 Paterson, J. Jardine, of Balgray, Lockerbie
1854 Paterson, J. W., Terrona, Langholm
1877 Paterson, Richard L., Langside, Dalkeith
1878 Paterson, Robert B., V.S., Irving Street, Dumfries
1848 Paterson, Robert, of Birthwood, Biggar
1882 Paterson, Robert, Stock-o'-Broom, Blairdrummond
1869 Paterson, Thomas, W.S., 81A George Street, Edinburgh
1851 Paterson, Walter, Merchant, Glasgow
1870 Paterson, Wm., of Brocklehurst, Mouswald, Dumfries
1874 Paterson, William Grindlay, Scotsburn Invergordon
1865 Paterson, Wm. Innes, Armadale, Thurso
1878 Paterson, Wm., Auldtown of Carnousie, Turriff
1857 Paton, Alexander, Norwood, Sydenham, London
1880 Paton, James, jun., Obney, Bankfoot, Perth
1873 Paton, John, of Viewforth, Stirling
1859 Paton, John, Kirkness, Lochgelly
1838 Paton, John, of Crailing, Kelso

Admitted
1873 Paton, Robert, West Drip, Stirling
1865 Patrick, James, late of Kilmun, Argyllshire
1873 Patrick, James, Queenzieburn, Kilsyth
1882 Patten, James, Advocate, 7 Drummond Place, Edinburgh
1870 Patterson, Alex., Broombarns, Forgandenny, Bridge of Earn
1850 Patterson, John, Balliemore, Strachur
1851 Patterson, Robt., Queen Street, Stirling
1864 Pattison, A. D., of Dalmuir, 22 Belgrave Crescent, Edinburgh
1872 Pattison, J. P., of The Haining, Selkirk
1861 Pattullo, Peter, Eassie Farm, Meigle
1877 Paul, Gavin, Wilsontown, Lanark
1880 Paul, George M., C.S., 16 St Andrew Square, Edinburgh
1882 Paul, Robert, Laigh Park, Milngavie, Dumbartonshire
1877 Paul, Walter, Ibert, Killearn
1855 Paul, William, Advocate, Aberdeen
1882 Paull, James, Advocate, Aberdeen
1878 Payne, James, Thornhill
1854 Pearson, Andrew A., of Springfield, Carluke
1863 Pearson, David A., Johnston Lodge, Laurencekirk
1858 Peat, John, Manor, Stirling
1872 Peddie, John Dick, M.P , 33 Buckingham Terrace, Edinburgh
1880 Peddie, Wm., 11 South Methven Street, Perth
1867 Peile, H.R.B., Mansion House, Greenock
1864 Pelham, C. Thursby, Cound Rectory, Shrewsbury
1865 Pender, John Menzies, Glenlyon Lodge, Nairn
1869 Pender, John, M.P., 66 Old Bond Street, London, E.C.
1869 Pender, J., Springhill, Stane, Motherwell
1878 Pendreigh, George, Catcune, Gorebridge
1868 Penman, John, Bonally, Colinton
1859 Penny, Thomas, Bartlehill, Coldstream
1882 Perman, Thomas Frederick, 2 West Regent Street, Glasgow
1854 Peter, John, Croyard, Beauly
1875 Peterkin, Jas. Grant, of Grange, Forres
1879 Peterkin, William, Dunglass, Conan Bridge
1871 Petrie, George, Easter Suddie, Avoch
1868 Petrie, James, Banker, Dufftown
1871 Petrie, S. F., 350 Leith Walk, Edinburgh
1870 Petrie, William, Kirkhill, Elgin
1876 Petrie, W. A., Rosebrae, Elgin
1875 Pettigrew, James, Cairnhill House, Airdrie
1879 Phillip, David, S.S.C., 41 Charlotte Square, Edinburgh
1882 Phillips, Thomas, Carse, Kirkcudbright
1856 Philip, George, Boynds, Keith Hall, Inverurie
1851 Philip, John, Polton East Mains, Lasswade
1858 Philip, W., Lofthillock, Keith Hall, Inverurie
1864 Philp, Robert, Royal Hotel, Bridge of Allan
1876 Picken, Thos., Barsalloch, Port William
1857 Picken, James, Laigh Langside, Craigie, Kilmarnock
1857 Picken, John, Mansfield Mains, New Cumnock
1860 Picken, R., Barnkirk, Newton-Stewart
1871 Pirrie, James P., Coachbuilder, Perth
1873 Pitblado, Charles B., Charlestown, Dunfermline
1878 Pitcairn, Henry H., of Tiroran, Mull
1863 Pitcairn, John, 9 Abbotsford Crescent, St Andrews

Admitted
1859 Pitman, Frederick, W.S., 11 Great Stuart Street, Edinburgh
1859 Pittendrigh, A., Mains of Park, Lonmay
1859 Plenderleith, A., Moorfoot Gorebridge
1860 Plummer, J., 11 Bruntsfield Place, Edinburgh
1881 Pollock, A., Agricultural Engineer, Mauchline
1881 Pollock, George, Seedsman, Stirling
1881 Pollock, J. J., of Auchineden, Strathblane
1882 Pollock, John, Greenlaw, Mearns, Renfrewshire
1844 Pollok, Allan (of Faside, Mearns), Ballinasloe
1870 Pollok, John, of Ronachan, Clachan, Greenock
1873 Pollok, John, of Blackhouse, Mearns
1863 POLWARTH, Right Hon. Lord, Mertoun House, St Boswells
1877 Pople, George, Newhouse, Perth
1867 Pople, H. W., Royal British Hotel, Perth
1861 Pople, J. B., of Newhouse, Perth
1880 Porteous, James, Solicitor, Coldstream
1878 Porteous, David Scott, of Lauriston, Montrose
1877 Porter, George, jun., 56 Marischal Street, Aberdeen
1855 Porter, James, Inverurie
1881 PORTLAND, His Grace the Duke of, Welbeck Abbey, Bucks
1880 Pott, George, of Potburn, Linthaughlee, Jedburgh
1854 Pott, Gideon, of Dod, Knowesouth, Jedburgh
1867 Potter, James, of Glenfuir, Falkirk
1863 Potts, Andrew, Newton, Coupar-Angus
1861 Powrie, Archibald, Lairwell, Perth
1849 Powrie, James, of Reswallie, Forfar
1864 Prentice, George, of Strathore, Newbigging, Burntisland
1865 Prentice, R. R., Skeddoway, Kirkcaldy
1875 Preston, W. C., Archonachie Lodge, Muir of Ord
1873 Pretsell, James, Drummelzier Place, Rachan Mill, Biggar
1880 Primerose, Alfred G., Dock Street, Dundee
1863 Primrose, James Thomson, late Sauchland, Ford
1875 Pringle, Adam T., 29 Grassmarket, Edinburgh, and India Buildings, Kelso
1859 Pringle, Alexander, of Whytbank, Selkirk
1863 Pringle, David, of Wilton Lodge, Hawick
1863 Pringle, David, Torquharn, Stow
1876 Pringle, James, 1 Bellevue Place, Edinburgh
1863 Pringle. James Thomas, of Torwoodlee, Galashiels
1865 Pringle, John, Garvald, Gorebridge
1852 Pringle, Robert K., Shorncliffe, Cheltenham
1877 Pringle, Wm., Huntly Cote, Gorebridge
1868 Profeit, Dr, Craigowan Cottage, Balmoral, Ballater
1868 Proudfoot, T., Pinkiehill, Musselburgh
1877 Pudney, R. L., Earls Colne, Halstead, Essex—*Free Life Member*
1871 Pullar, Robert, of Tayside, Perth
1865 Punton, F. H., West Fortune, Drem
1872 Purdom, Walter, Blinkbonny, Roxburgh
1880 Purves, Captain Home, of Purves Hall, Greenlaw, Berwickshire
1861 Purves, James, Barrogill Mains, Wick

Admitted
1871 Purves, Thomas, Rhifail, Bettyhill, Thurso
1869 Purves, William, Thurdistoft, Thurso
1844 Purvis, John, of Kinaldy, St Andrews

1869 QUEENSBERRY, Most Noble the Marquis of, Kinmount, Annan

1882 Rae, John, jun., Corn Merchant, Ellon
1872 Rae, Robert, Burnbank, Foulden, Berwick-on-Tweed
1882 Rae, William, Advocate, Aberdeen
1860 Rae, William, Gateslack, Thornhill
1870 Rain, Wm., Kempleton, Castle-Douglas
1867 Raines, Thomas, Bridgehaugh, Stirling
1879 Raitt, James, Culcrieff, Crieff
1867 Ralston, Andrew W. (late Lagg, Ayr), America
1868 Ralston, Andrew, Glamis, Forfar
1870 Ralston, A. R., Genoch, Straiton, Maybole
1871 Ralston, James J., Old Faskally, Pitlochry
1877 Ralston, John, Milmain, Stranraer
1883 Ralston, Wm. H., Culmore, Stranraer
1869 Ramsay, Alexander, *Banffshire Journal* Office, Banff
1871 RAMSAY, Sir James Henry, of Bamff, Bart., Alyth
1856 Ramsay, John, of Kildalton, M.P., Port Ellen, Greenock
1875 Ramsay, John, Butcher, Kilbarchan
1856 Ramsay, Col. John, of Barra, Straloch, Aberdeen
1881 Ramsay, R. G. Wardlaw, of Whitehill, Rosewell
1837 Ranken, George, Australia
1874 Ranken, John, Aberlady, Longniddry
1878 Rankin, Alex., Aird, Stranraer
1883 Rankin, Robert, Auctioneer, Inchterf, Kirkintilloch
1876 Rankine, Alex. M., yr. of Beoch, Lochlands, Maybole
1874 Rankine, John, of Bassendean, 10 Melville Street, Edinburgh
1857 Rankine, John, of Beoch, Lochlands, Maybole
1868 Rankine, R. W., Rosebank, Falkirk
1859 Rannie, M. G., 13 Rupert Street, Glasgow
1878 Ransome, James Edward (Ransomes, Sims, and Head), Ipswich
1868 Rate, George (late Mungoswells, Drem), America
1854 Rattray, Major-General J. C., of Craighall, Blairgowrie
1874 Rattray, James Clark, M.D., of Coral Bank, Blairgowrie
1882 Rattray, Patrick, C.A., Gresham House, Glasgow
1856 Rawdin, Joseph, Chemist, Jedburgh
1870 Rawline, J. D., Rose Farm, Formby, Liverpool
1854 Ray, William, Sunbank, Elgin
1863 Rea, Charles, Doddington, Wooler
1878†REAY, Right Hon. Lord, Carolside, Earlston
1878 Reay, Thomas, Abbey Town, Carlisle
1874 Reddie, Captain John Griffiths, of Redhouse, Rickarton House, Stonehaven
1857 Redfern, W. Macquarrie, London
1864 Reekie, A., Walton, Auchtertool, Kirkcaldy
1872 Reekie, Wm., Carterhaugh, Selkirk
1873 Reid, Alexander, Architect, Elgin
1880 Reid, Andrew, Haining Valley, Linlithgow
1844 Reid, Charles G., W.S.
1876 Reid, Donald, Edradour Distillery, Pitlochry
1867 Reid, F. R., of Gallowflat, Rutherglen

Admitted
1879 Reid, Frank R., jun., Biallid, Kingussie
1874 Reid, George, Baads of Drum, Peterculter, Aberdeen
1876 Reid, George, jun., Clinterty, Blackburn, Aberdeen
1871 Reid George, of Tilliery, Milnathort
1880 Reid, G. A., Leith
1877 Reid, Dr James, Templeton, Mossat
1872 Reid, Dr J. B., Aberfeldy
1857 Reid, J., Corsebank, Sanquhar
1858 Reid, James, Waterside Cottage, Alford
1876 Reid, James, Horse Bazaar, Peterhead
1873 Reid, James, Kilmundy, Glamis
1867 Reid, James R., of Woodburn, Rutherglen
1869 Reid, James, Ittingston, Huntly
1882 Reid, John, of Dunduff, Dunfermline
1870 Reid, John James, Advocate, 6 Great Stuart Street, Edinburgh
1876 Reid, Peter, Crofts of Glenmuick, Ballater
1882 Reid, Peter, Waulkmilton, Linlithgow—*Free Life Member*
1882 Reid, Robert, Writer, Lochwinnoch
1864 Reid, Walter, Graigarnhall, Bridge of Allan
1871 Reid, William, Pittentian, Crieff
1871 Reith, James, South Auchinclech, Skene, Aberdeen
1876 Reith, Robert, Middlefield, Woodside, Aberdeen
1882 Rennie, David, 16 James Morrison Street, Glasgow
1878 Rennie, James, Brewer, Dumfries
1881 Rennie, James, Ironshill, Inverkeilor, Arbroath
1882 Rennie, James, Corrie, Kilsyth
1877 Rennie, John, Craigieburn, Falkirk
1872 Renwick, John, Nurseryman, Melrose
1882 Renwick, Robert, Dalmuir Farm, Dalmuir
1879 Renwick, William, Corstorphine
1859 Reoch, J F., 8 Finlayson Place, Kelvinside, Glasgow
1873 Richardson, Alex., 28 Colville Place, Edinburgh
1863 Richardson, D., of Hartfield, Church Place, Greenock
1874 Richardson, George, Linwood, Paisley
1861 RICHARDSON, Sir James T. Stewart, of Pitfour, Bart., Perth
1873 Richardson, John, 59 Warrender Park Road, Edinburgh
1851 Richardson, John, Writer, Haddington
1863 Richardson, J., Southfield, Haddington
1878 Richardson, Ralph, W.S., 19 Castle Street, Edinburgh
1837 Richardson, Robert, 16 Bruntsfield Place, Edinburgh
1863 Richardson, R., Crailingnook, Jedburgh
1878 Richardson, Robert A., Dunesk, Lockerbie
1878 Richardson, William, Floshend, Gretna
1840*RICHMOND and GORDON, His Grace the Duke of, K.G., Gordon Castle, Fochabers—*President of the Society.*
1861 Richmond, G., of Balhaldie, Braco
1861 Richmond, John, Dron, Bridge of Earn
1871 Richmond, T., Hilton, Perth
1831 Rickman, Thomas, late Architect, Birmingham
1877 Riddell, A., 1 Victoria Street, Edinburgh
1863 Riddell, David, Blackhall, Paisley
1880 Riddell, John, Rink, Galashiels
1854 Riddell, Thomas, Athelstaneford, Drem
1845 RIDDELL, Sir T. M., of Sunart, Bart., Strontian
1852 Riddell, William, Hundalee, Jedburgh
1863 Riddell, William, Hailes Mains, Haddington

Admitted
1880 Riddell, Andrew, Yeavering, Wooler
1878 Rigg, James Home, of Tarvit, Cupar-Fife
1861 Rigg, Wm., Banks, Kirkcudbright
1877 Rignall, James, Agricultural Implement Agent, Cupar Fife
1852 Rintoul, Charles, Kingston, North Berwick
1861 Rintoul, D., Mains of Blebo, Cupar Fife
1865 Rintoul, Robert, of Lahill, Largo
1882 Risk, James, Drumbrae, Bridge of Allan
1869 Ritchie, Charles, S.S.C., 20 Hill Street, Edinburgh
1865 Ritchie, Charles, late Ladoga Lodge Musselburgh
1877 Ritchie, David (of Kilmux, Kennoway, Fife), 13 Windsor Street, Edinburgh
1881 Ritchie, G. Deans, Cloverhill, Biggar
1857 Ritchie, John, Newbigging Mains, Carnwath
1867 Ritchie, John, Whitecastle, Biggar
1878 Ritchie, John, 11 Morrison Street, Edinburgh
1872 Ritchie, Robert, Cloverhill, Biggar
1879 Ritchie, Robert B., Accountant, Dundee
1853 Ritchie, W., Spott, Dunbar
1852 Ritchie, Wm., West Plean, Stirling
1865 Ritchie, W., of Middleton, Gorebridge
1882 Robb, George, 11 Germiston Street, Glasgow
1863 Roberton, John, Falside, Stitchil, Kelso
1863 Roberton, Robert, Ladyrig, Kelso
1873 Roberts, James, Greenhead of Arnot, Leslie, Fife
1881 Roberts, William, Auctioneer, Bathgate
1871 Robertson, Mrs, sen., of Struan, Rannoch
1881 Robertson, Alexander, Forester, Schaw Park, Alloa
1876 Robertson, Alex., Tocherford, Rayne, Warthill, Aberdeen
1879 Robertson, Alex., Ballechin, Ballinluig
1869 Robertson, Rev. A. Irvine (of Kindrochet), Clackmannan
1860 Robertson, Dr Charles, Auchtercairn, Gairloch
1869 Robertson, C., of Kindeace, Invergordon
1861 Robertson, David, Allan Hill House, Dunblane
1847 Robertson, David Souter, of Whitehill, Cookston Park, Brechin
1879 Robertson, Donald, Blackhill, Ballinluig
1882 Robertson, Donald, of Mayfield, Cupar Fife
1876 Robertson, Duncan, of Pennyghael, 73 Great King Street, Edinburgh
1864 Robertson, D. G., of Torrie, Callander
1880 Robertson, Edgar W., of Auchleeks, Perthshire
1876 Robertson, George, of Hedderwick, C.E., 47 Albany Street, Edinburgh
1860 Robertson, George B., 1 Windsor Street, Edinburgh
1836 Robertson, James, 27 Albert Place, Stirling
1881 Robertson, James, Blackhaugh, Dunkeld
1882 Robertson, James, Forester, Panmure, Carnoustie
1859 Robertson, J., Denbrae, Cupar Fife
1880 Robertson, Major James, United Service Club, Edinburgh
1870 Robertson, James A. (late Chapel Park, Kingussie), Virginia, U.S.
1876 Robertson, Lieut.-Colonel Carmichael, of Whitefield, Govan
1873 Robertson, James F., New Mains, North Berwick
1882 Robertson, James J., Kinloch Morven, Morvern, Argyllshire
1851 Robertson, James Stewart, W.S., of Edradynate, Ballinluig

Admitted

1876 Robertson, James Stewart, yr. of Edradynate, Ballinluig
1876 Robertson, John, Auchnahyle, Pitlochry
1874 Robertson, John, of Grishernish, Portree
1855 Robertson, John, Mount Abundance, Queensland
1854 Robertson, J., Glencripisdale, Strontian
1870 Robertson, John, West Mitchellton, Lochwinnoch
1878 Robertson, John, of Golden Grove, South Australia
1864 Robertson. J., Old Blair, Blair-Athole
1867 Robertson, J., Bellaty, Glenisla, Alyth
1874 Robertson, John, of Rhynie, Fearn
1856 Robertson, John, 68 Bath Street, Glasgow
1873 Robertson, John S., Belmont Estate Office, Meigle
1857 Robertson, Neil, Auchtomore, Lochearnhead
1872 Robertson, Peter, Achilty, Dingwall
1870 Robertson, Peter D., 9 King Street, Finsbury Square, London, S.C.
1847 Robertson, General Richardson, of Tullybelton, C.B., Bankfoot
1872 Robertson, Robt., West Barns, Dunbar
1882 Robertson, Robert, Breakough, Millport, Isle of Cumbrae
1876 Robertson, Robert Wm., of Glenshillish, Rockingham, Kilcreggan
1861 Robertson, Stewart Souter, yr. of Whitehill, London and North-Western Railway Co.'s Goods Office, Broad Street, London, E.C.
1883 Robertson, Thomas, Highland Railway, Inverness
1859 Robertson, W. M., 32 Wellington Street, Kingston, Canada
1874 Robertson, Wm., Aberlour Mains, Craigellachie
1857 Robertson, Wm., Cuttlebrae, Fochabers
1863 Robertson, William, V.S., Professor of Hippo-pathology, Royal Vet. College, Camden Town, London
1879 Robertson, Wm., jun., Two-mile House, Murrayshall, Perth
1879 Robertson, Wm., Engineer, Princes Street, Perth
1870 Robertson, Wm. A., Abbotshill, Forres
1872 Robeson, Geo., Brotherston, Kelso
1851 Robinow, Adolph, 21 Clarendon Crescent, Edinburgh
1882 Robinson, Archd., M.R.C.V.S., Greenock
1871 Robinson, Robert, Manor Farm, Claverdon, Warwick
1878 Robinson, Thos., Cargo, Carlisle
1863 Robson, Chas., Lurdenlaw, Kelso
1874 Robson, John, Newton, Bellingham, Northumberland
1851 Rodger, David, Penkiln, Garlieston
1881 Rodger, George, Newton Bank, Preston Brook
1857 Rodger, Hugh, Hillhead, Kilmarnock
1882 Rodger, Hugh, Cleland Estate Office, Townhead, Motherwell
1859 Rodger, Peter, Selkirk
1838 Rodger, R., Hadlow Castle, Tunbridge
1882 Rodger, Robert, jun., Mains of Dun, Montrose
1865 Rodger, Robert M., Estate Factor and Banker, Royal Bank, Airdrie
1862 Rodgers, James S., Rose Mill, Dundee
1873 Rodgie, Henry, Aithernie, Leven
1881 Rogers, Wm., Ph.D., Rose Mill, Dundee
1851 Rogerson, G., of Pearseby Hall, Pumplaburn, Lockerbie
1864 Rogerson, James, of Wamphray, Gillesbie, Lockerbie
1837 Rolland, Adam, of Gask, 20 Athole Crescent, Edinburgh

Admitted

1883 Rollo, James, Rosemount, Perth
1857 ROLLO, Right Hon. Lord, Duncrub House, Dunning
1863 Romanes, Robert, of Harryburn, Lauder
1873 Rome, Thomas, Northampton Downs, Barcoo River, Queensland—*Free Life Member*
1857 Ronaldson, Alex., Glasgow
1869 Rorrison, John, Dumfries
1879 Roscoe, Wm. C., Broughall House, Whitchurch, Shropshire
1883 Rose, Campbell, Fleenas, Nairn
1869 Rose, Hugh, Solicitor, Inverness
1875 Rose, Rev. Hugh Francis, of Holme Rose, Fort-George Station
1865 Rose, James, Mains of Connage, Fort-George Station
1865 Rose, John, Leanach, Inverness
1865 Rose, Major James, of Kilravock, Nairn
1868†ROSEBERY, Right Hon. the Earl of, Dalmeny Park, Edinburgh
1883 Ross, Alex., Architect, Inverness
1875 Ross, Alex., Oldtown, Tarland
1880 Ross, Alex., 66 Queen Street, Edinburgh
1864 Ross, David, Banker, Dingwall
1880 Ross, D. A. MacBean, Banker, Tain
1864 Ross, D. G., Merchant, Dingwall
1874 Ross, Duncan, Hilton, Inverness
1883 Ross, Duncan Munro, yr, of Cromarty, Cromarty
1872 Ross, George, Merchant, Dingwall
1839 Ross, George, of Pitcalnie, Parkhill
1865 Ross, George, Invergordon
1849 Ross, Lieut.-Col. George W. H., of Cromarty
1858 Ross, H., jun., Union Bank of Scotland, Tarland
1883 Ross, James, Solicitor, Inverness
1877 Ross, James, Baldow, Lennoxtown
1876 Ross, James, Balblair, Edderton
1870 Ross, James, M.D., Linksfield, Elgin
1871 Ross, James E., Factor, Abercairny, Crieff
1870 Ross, John, The Grove, Ravenglass, Carnforth
1874 Ross, John, Meikle Tarrel, Fearn
1843 Ross, John Leith, of Arnage, Ellon
1871 Ross, Peter, Arngrove, Torphins
1880 Ross, Richard, Rutherford, Kelso
1856 Ross, Thomas, Bachilton, Perth
1871 Ross, Wm., Annesley, Torphins
1881 Ross, Wm., North Drumgley, Forfar
1857†ROSSLYN, Right Hon. the Earl of, Dysart House, Kirkcaldy
1870 Rough, Robert, Wellford, Broxburn
1850 Roughead, D., 24 Forth Street, Edinburgh
1878 Routledge, Charles M., Bank Agent, Port-William
1878 Routledge, James J. F., Oldmill, Port William
1870 Routledge, Wm., Elrig, Port William
1857 Rowan, J. M., late Atlas Works, Glasgow
1881 Rowan, P. F. Connal, of Meiklewood, Stirling
1871 Roxburgh, Robt., Seed Merchant, Kinross
1863 ROXBURGHE, His Grace the Duke of, Floors Castle, Kelso
1856 Roy, Alex., Waterton, Insch, Aberdeen
1871 Roy, Fred. Lewis, of Nenthorn, Kelso
1871 Roy, Thos., Craigclowan, Perth
1856 Royd, Robert Whyt, late Balgeddie Kirkcaldy
1882 Russel, James, Dundas Castle, Queensferry
1846 Russell, Alex. James, C.S., 9 Shandwick Place, Edinburgh

Admitted
1854 Russell, Andrew Walker, of Kenlygreen, St Andrews
1867 Russell, A., Wishaw House, Lanarkshire
1854 Russell, Arthur, Royal Bank, Cupar Fife
1859 Russell, David, Silverburn, Leven
1877 Russell, George, Carnwath
1882 Russell, George, Hatton, Largo
1882 Russell, James, Allanton, Hamilton
1875 Russell, James, National Bank, Airdrie
1869 Russell, James, Parbroath, Cupar Fife
1851 Russell, James M., Greendykes, Tranent
1862 Russell, John, late Saughton Hall Mains, Murrayfield
1881 Russell, Thomas Purves, of Warroch, Milnathort
1853 RUSSELL, Sir William, of Charlton, Bart., Gloucester
1858 Rust, James, Paddocklaw, Banff
1872 Rutherford, Andrew, Rumbleton Law, Gordon
1860 Rutherford, G., Monteath's Houses, Gorebridge
1863 Rutherford, G., Printonan, Coldstream
1874 Rutherford, Dr James, Woodilee Asylum, Lenzie
1863 Rutherfurd, William A. Oliver, of Edgerston, Jedburgh
1854 Ruxton, Andrew, [South] Artrochie, Ellon
1870 Ryrie, Robert, 34 Park Street, Grosvenor Square, London

1880 St Clair, J. Sutherland, 99 High Street, Musselburgh
1856 Salmon, J., The Linn, Johnstone
1871 Salmond, David S., 40 St Enoch Square, Glasgow
1858 Salmond, James, Cairnie, Arbroath
1868 Salmond, R., Nether Balfour, Durris
1854 SALTOUN, Right Hon. Lord, Philorth House, Fraserburgh
1875 Sanderson, James. Dykefoot, Carnwath
1864 Sanderson, William, late Corstorphine Bank, Corstorphine
1855 SANDILANDS, Hon. James, 31 Princes Gate, London
1876 Sandison, Alex., Uyasound, Unst
1881 Sandison, Marcus, Hempriggs, Wick—*Free Life Member*
1873 Sands, James, Milton, Burn of Cambus, Stirling
1870 Sanders, R. B., Hutton Grange, Gisborough, Yorkshire
1851 Scobie, John, Keoldale, Lairg
1875 Scobie, Neil F., of Hawkhill, Inverness
1854 Scoon, Kenneth, 46 Rankeillor Street, Edinburgh
1860 Scott, A., Hillside House, Lockerbie
1876 Scott, Alexander, Towie Barclay, Aberdeen
1875 Scott, Alex., 3 Bellfield, Portobello
1880 Scott, Alexander, 24 Mearns Street, Greenock
1876 Scott, Andrew T. S., of Crosswoodhill, 1 Hill Street, Edinburgh
1864 SCOTT, Right Hon. Lord Charles, Dalkeith
1857 Scott, C., Newtonlees, Dunbar
1880 Scott, Charles, Bradystone, Murthly
1882 Scott, Colin William, Hawkhill, Largs
1878 Scott, David Francis, Meadowfield, Duddingston, Edinburgh
1866 Scott, D. G. C., Maisondieu, Brechin
1880 Scott, Ebenezer Erskine, C.A., 10 Castle Street, Edinburgh
1877 Scott, Lieut.-Col. Francis Cunningham, C.B.
1863 Scott, George, Caverton Mill, Kelso
1861 Scott, Gideon James (late Hyndhope, Selkirk), New Zealand
1861 SCOTT, Right Hon. Lord Henry, M.P., 3 Tilney Street, Park Lane, London
1859 Scott, Hercules, of Brotherton, Bervie
1882 Scott, Hugh James Elibank, Gala House, Galashiels
1868 Scott, James, Bogton, Bishopbriggs
1850 Scott, James, 1 Woodside Place, Glasgow
1862 Scott, James, of Easter Tulloch, Stonehaven
1878 Scott, James, Distiller, Garrion Tower, Wishaw
1880 Scott, James, 5 Grassmarket, Edinburgh
1880 Scott, James Addison, of Wooden, Kelso
1882 Scott, James B., Ryewraes Farm, Linwood
1870 Scott, Maj.-Gen. James C., United Service Club, Edinburgh
1873 Scott, James G., Hill of Ruthven, Perth
1863 Scott, Dr James Robson (of Ashtrees, Yetholm), Belford
1826 Scott, J., Finnart House, Greenock
1870 Scott, John, Clebrig, Lairg
1881 Scott, John, Hillhead, St Andrews
1883 Scott, John, Oldtown, Culduthel, Inverness
1879 Scott, John, White Cottage, Dalmally
1880 Scott, John, of Gala, Galashiels
1881 Scott, Rev. John, Camelon Manse, Falkirk
1881 Scott, John Corse, of Sinton, Hawick
1877 Scott, John Lindsay, of Mollance, Castle-Douglas
1863 Scott, John Scott Elliot, Kirndean, Newcastleton
1868 Scott, John, Springfield House, Uddingston
1868 Scott, Malcolm, Balmuildy, Bishopbriggs
1872 Scott, Peter, Chirnside Crofts, Chirnside
1841 Scott, Captain Robert, late H.E.I.C S.
1872 Scott, Ralph Erskine, C.A., 21 Drumsheugh Gardens, Edinburgh
1863 Scott, Robert, Falnash, Hawick
1874 Scott, Robert, Easter Manbeen, Elgin
1882 Scott, Robert, Turin Mains, Forfar
1878 Scott, Robt. A., Dormont Grange, Lockerbie
1875 Scott, Robt. Sinclair, Craigievar, Wemyss Bay
1881 Scott, Ronald, Renmure, Friockheim, Arbroath
1876 Scott, Thos., 51 Grassmarket, Edinburgh
1863 Scott, T., of Mersington, Whitton, Kelso
1860 Scott, T. Robson, of Newton, Jedburgh
1861 SCOTT, Right Hon. Lord Walter, Dalkeith
1850 Scott, Walter, Glendronach, Huntly
1863 Scott, W., Mervinslaw, Jedburgh
1857 Scott, William, Spylaw, Kelso
1855 Scott, William, Wester Rora, Mintlaw
1875 Scott, William, Condorrat, Airdrie
1863 Scott, William, 11 Geneva Terrace, Brixton, London
1857 Scott, William, Urquhart Road, Old Meldrum
1863 SCOTT, Sir William, of Ancrum, Bart., Jedburgh
1872 Scoular, John, Crook, Stirling
1881 SEAFIELD, Right Hon. the Earl of, Cullen House, Cullen
1875 Seatter, Wm., Saviskaill, Rousay, Orkney
1872 Selby, B. P., Paston, Coldstream
1872 Selby, Robert, Hassendean Bank, Denholm, Hawick
1863 Selby, Ephraim, Hassendean Bank, Hawick
1830†SELKIRK, Right Hon. the Earl of, St Mary's Isle, Kirkcudbright
1849 Sellar, P. Plenderleith, Hartfield, Tain
1868 Sellar, R., Implement Maker, Huntly

Admitted
1868 Semple, John, Haughs of Kinnaird, Brechin
1857 Semple, Thomas, Carradale, Campbeltown
1877 Semple, William, Mouswald Bank, Dumfries
1848 Seton, George, Advocate, 42 Greenhill Gardens, Edinburgh
1859 Seton, Henry, V.S., Tollcross, Edinburgh
1863 SHAND, Hon. Lord, New Hailes, Musselburgh
1868 Shand, Geo., Ordens, Boyndie, Banff
1870 Shand, John, M.D., 34 Albany Street, Edinburgh
1882 Shand, Thomas Livingstone Reid, of Fawsyde, Bervie
1864 Shand, William, New York
1844 Sharp, James, Helensburgh
1881 Sharp, James, Viewfield, Blackford, Perthshire
1878 Sharp, John Johnstone, Leaston, Upper Keith—*Free Life Member*
1871 Sharp, Peter, Bardrill, Blackford
1871 Sharp, Thos., Clathymore, Auchterarder
1835 Shaw, Chas , W.S., Thornhill, Inverness
1872 Shaw, Chas. G., Ayr
1883 Shaw, Duncan, W.S., Inverness
1850 Shaw, Hary, Bogfern, Tarland
1863 Shaw, James, Skaithmuir, Coldstream
1868 Shaw, James, Tillyching, Lumphanan
1883 Shaw, James T., Mungastell, Morvern
1883 Shennan, John, Balig, Kirkcudbright
1883 Shennan, Robert, Balig, Kirkcudbright
1882 Sheppard, Rev. H. A. G., of Rednock, Port of Monteith
1865 Shepherd, George, Shethin, Tarves
1875 Sheriff, G., jun., Glengyle, Inversaid
1864 Sheriff, John Bell, Carronvale, Larbert
1872 Shiel, Andrew, Implement Dealer, Coldstream
1880 Shiell, Walter, Nether Fala, Eddleston
1877 Shields, James, Byers, Bathgate
1871 Shields, John, Balhousie Castle, Perth
1866 Shiels, Geo. (late Balgove, St Andrews), Manitoba
1882 Shirlaw, James, Carfin, Motherwell
1847 Shirriff, David, Muirton, Drem
1850 Shirriff, Samuel D., North Berwick
1854 Shortreed, R., Attonburn, Yetholm
1877 Sidey, James, Gourdie, Dunkeld
1873 Sievewright, W. (late Solicitor, Lerwick), New Zealand
1866 Sim, Alex., late Fawells, Inverurie
1870 Sim, Henry, Cattle Salesman, Inverness
1875 Sim, John Fraser, Oban
1879 Sim, Peter, Mains of Powfowlis, Falkirk
1879 Sime, Alex., Dumbarnie, Largo, Fife
1882 Sime, John, Blervie, Forres
1830 Simpson, Alex. Horatio, late Hayes, Uxbridge
1860 Simpson, Alex., Wallyford, Musselburgh
1879 Simpson, Alex., Inverness
1853 Simpson, George, Bedrule, Jedburgh
1868 Simpson, George, South Burreldales, Alvah, Banff
1869 Simpson, George, 2 Lauder Road, Edinburgh
1851 Simpson, James, of Mawcarse, Milnathort
1878 Simpson, James, North Lethans, Kinross
1878 Simpson, James, Tower, Alloa
1875 Simpson, John, Drumfork, Helensburgh
1876 Simpson, John (Auchinachie & Simpson), Keith
1880 Simpson, John, 6 Greenmount Villas, Burntisland
1839 Simpson, Robert, of Cobairdy, Huntly
1878 Simpson, Thos., West Byres, Ormiston

Admitted
1874 Simson, C.S., of Threepwood, 7 Nelson Street, Edinburgh
1861 Simson, George, Courthill, Kelso
1871 Simson, Thos., late Skelpie, Cupar
1873 SINCLAIR, The Right Hon. Lord, 55 Onslow Square, London, S.W.
1859 Sinclair, Arch., late Minard, Inveraray
1863 Sinclair, David, of North Loirston, Aberdeen
1857 SINCLAIR, Sir J. G. T., of Ulbster, Bart., M.P., Thurso Castle, Thurso
1875 Sinclair, John, Achintee, Fort-William
1869 Sinclair, Peter, Kilmartin
1864 SINCLAIR, Sir Robert C., of Stevenson, Bart., Achvarsdale Lodge, Reay, Thurso
1872 Sinclair, W. S. Thomson, of Freswick, Dunbeath Castle, Caithness
1850 Siveright, James, The Grove, Torquay
1877 Skead, George, Agent, Wishaw
1876 Skeen, George, Mill of Gellan, Aboyne
1831 Skene, Wm. F., W.S., 20 Inverleith Row, Edinburgh
1823 Skinner, Captain C. G. Macgregor, late Carisbrooke House, Isle of Wight
1856 Skinner, James, Woodside, Aberdeen
1869 Skinner, W., of Corra, W.S., City Clerk, 35 George Square, Edinburgh
1874 Skinner, Wm. M., Drumin, Ballindalloch
1857 Skirving, Adam, of Croys, Dalbeattie
1850 Skirving, Jas , Luffness Mains, Drem
1846 Skirving, R. Scot, 29 Drummond Place, Edinburgh
1858 Sleigh, John, Strichen Mains, Strichen
1881 Slessor, Rev. Alexander, The Manse, Balfron
1877 Sligo, Archibald Vincent Smith, of Inzievar and Carmyle, 5 Drummond Place, Edinburgh
1863 Slipper, R. B., late 427 New Cross Road, London, S.E.
1861 Sloan, D., Coachbuilder, Dumfries
1878 Sloan, James, Coachbuilder, Dumfries
1870 Sloan, John, Barnhill, Patna, Ayrshire
1869 Sloan, Wm., Brieryside, Monkton, Ayr
1877 Small, James, Banker, Kirkcaldy
1843 Small, David, Writer, Dundee
1859 Small, Jas., of Dirnanean, Pitlochry
1857 Small, Lindsay, of Foodie, Cupar
1864 Smart, Jas , Liberton Park, Liberton
1858 Smart, John, late Glasgowego, Blackburn, Aberdeen
1880 Smart, John Currie, 54 George Square, Edinburgh
1873 Smeaton, Rev. John, of Coul, Tulliallan Manse, Kincardine, Alloa
1857 Smith, Adam, Stevenson Mains, Haddington
1881 Smith, Adam Davidson, C.A., 29 St Andrew Square, Edinburgh
1877 Smith, Alex., Barnford, Dalrymple, Ayr
1847 Smith, Alexander, C.E., 94 Skene Street, Aberdeen
1852 Smith, Alex. (A. & W. Smith & Co.), Westbourne, Govan, Glasgow
1863 Smith, Alex., Letham, Berwick
1864 Smith, Alex. P., Munlochy Farm, Munlochy
1856 Smith, Andrew, Castle Mains, Douglas
1864 Smith, Andrew, Solicitor, Dingwall
1868 Smith, Andrew, Castle Mains, Gifford
1874 Smith, Archibald Haddow, 5 St Andrew Square, Edinburgh
1853 Smith, Chas., Whittinghame, Prestonkirk
1876 Smith, Charles, 36 Howard Street, Glasgow
1876 Smith, D. W. E., North Elphinstone, Tranent
1878 Smith, Edward, Netherholm, Kirkmahoe

Admitted
1882 Smith, E. Hedley, Whittinghame, Prestonkirk—*Free Life Member*
1864 Smith, F. C., Hoprig, Cockburnspath
1862 Smith, George, 20 Lynedoch Street, Glasgow
1872 Smith, G. P., 37 Gillespie Crescent, Edinburgh
1857 Smith, Hugh, 9 Kelvinside Terrace (North), Glasgow
1855 Smith, James, of Olrig, Thurso
1857 Smith, James, Broomhill, Partick
1859 Smith, James, 11 Dixon Street, Glasgow
1869 Smith, J. Mullochard, Ballindalloch
1882 Smith, James, Midkelton, Castle-Douglas
1877 Smith, James, Auchlin, Fisherie, Turriff
1878 Smith, James, 89 Grassmarket, Edinburgh
1879 Smith, James, Kelso
1880 Smith, James, Torphin, Colinton
1872 Smith, Jas. F., Fireburn Mill, Coldstream
1873 Smith, James, Pittengardner, Fordoun
1878 Smith, James T., Parkend, Lockerbie
1882 Smith, James Thrift, Duloch, Inverkeithing
1851 Smith, John, Advocate, Aberdeen
1873 Smith, John, Balmain, Fettercairn
1874 Smith, John, Cragganmore, Ballindalloch
1865 Smith, John, Inverallan House, Grantown
1874 Smith, John, Drumduan, Dess, Aberdeen
1880 Smith, John, Darnick, Melrose
1852 Smith, J. Gordon, Minmore, Ballindalloch
1877 Smith, John Guthrie, Mudgock Castle, Milngavie
1867 Smith, John Turnbull, C.A., 29 St Andrew Square, Edinburgh—*Auditor of Accounts to the Society*
1872 Smith, Peter, Crooks, Coldstream
1881 Smith, Ralph Colley, Skaithmuir, Coldstream
1864 Smith, Robert, of Brentham Park, Stirling
1877 Smith, Robert, Dalfibble, Dumfries
1872 Smith, Robt. G., Georgeville, Mid-Calder
1854 Smith, R. M., 4 Bellevue Crescent, Edinburgh
1870 Smith, Thomas, Ladyland, Dumfries
1873 Smith, Thomas, Pembroke, Ontario
1877 Smith, Thomas, Powrie, Dundee
1880 Smith, Thomas, The Castle, Maybole
1878 Smith, Thomas F., Dumfries
1854 Smith, Wm., Melkington, Cornhill, Northumberland
1856 Smith, Wm., West Drums, Brechin
1858 Smith, William, Middleton, Balquharn, Inverurie
1860 Smith, William, Banker, Moniaive
1863 Smith, W., of Benholm, Johnshaven
1868 Smith, William, New Mains of Urie, Stonehaven
1878 Smith, Wm,, Greenhead, Salton, Pencaitland
1878 Smith, William, Corskelly, Lonmay, Aberdeenshire
1878 Smith, William, Craigdhu, Glasserton
1882 Smith, William, Bridgend, Ceres
1881 Smith, William Anderson, Ledaig, Argyllshire
1873 Smith, Wm. B., Stoneleigh Villa, Leamington—*Free Life Member*
1883 Smith, Wm. James, Ness Iron Works, Inverness
1876 Smythe, David M., yr. of Methven, Perth

Admitted
1846 Smythe, William, of Methven, Perth
1880 Somervail, James A., Hawkslaw, Coldstream
1857 Somervail, P., Glendevon, Winchburgh
1882 Somervell, James, of Sorn, Sorn Castle, Mauchline
1848 Somerville, J., Birch Villa, Peebles
1858.Somerville, James, S.S.C., 23 South Blacket Place, Edinburgh
1867 Somerville, George Purdie, Muirhouse, Carnwath
1881 Somerville, William, Cormiston, Biggar
1850 Somerville, Wm., Merchant, Glasgow
1882 Sommerville, John, Belloch, Campbeltown
1881 Soutar, John, West Hall, Murroes, Dundee
1850†SOUTHESK, Right Hon the Earl of, K.T., Kinnaird Castle, Brechin
1877 Spalding, Augustus Frederick Montague, of Holme, New Galloway
1865 Spears, W. R., Writer, Kirkcaldy
1881 Speid, James, Forneth, Blairgowrie
1879 Speir, Robert, Blairpark, Largs
1879 Speir, R. T. A., Culdees Castle, Muthill
1838 Speirs, T. Dundas, late Burnfoot, Houston
1860 Spence, Adam White, Glencairn House, Crieff
1875 Spencer, A., 160 Hope Street, Glasgow
1863 Spowart, T., of Broomhead, 7 Coates Crescent, Edinburgh
1881 Sproat, George B., Writer, Tobermory
1870 Sproat, Robert, Lennox Plunton, Kirkcudbright
1881 Sproat, Wm., Procurator-Fiscal, Tobermory
1878 Sproat, William T., Borness, Kirkcudbright
1830 Sprot, Mark, of Riddell, Lilliesleaf
1836 Stables, W. A., Nairn
1845†STAIR, Right Hon. the Earl of, K.T. Oxenfoord Castle, Dalkeith
1883 Stalker, Donald, Forester, Benmore Kilmun
1880 Stansfeld, Capt. John, Duninald, Montrose
1854 Starforth, John, Architect, 37 York Place, Edinburgh
1875 Stark, Matthew C., Westerton Farm Doune
1862 Stark, Ralph, of Summerford, Camelon, Falkirk
1870 Stark, Robert, Kirkcaldy
1861 Stark, W., late Contentibus, Mid-Calder
1869 Statter, Thos., jun., Stand Hall, Whitefield, Manchester
1872 Stavert, Archd., of Hoscote, 18 Royal Terrace, Edinburgh
1851 Stedman, James, Boundary Bank, Jedburgh
1862 Steedman, J., late Charleston, Dunfermline
1880 Steel, Adam, yr. of Blackpark, Fairmount, Perth
1870 Steel, Major Gavin, of Belintore, 17 Abercromby Place, Edinburgh
1880 Steel, John, Lochwood, Coatbridge
1878 Steel, Thomas Gibson, Gladenholm, Parkgate, Dumfries
1853 Steele, Robert, Greenock
1874 Steell, Gourlay, R.S.A., 4 Palmerston Place, Edinburgh—*Animal Portrait Painter to the Society*
1854 Stegmann, Conrad, late Merchant, Leith
1879 Stein, John, Broomhouse, Dunbar
1850 Stenhouse, James, South Gyle, Corstorphine
1861 Stenhouse, James, Turnhouse, Cramond Bridge

Admitted
1876 Stenhouse, James S., of Northfod Dunfermline
1858 Stephen, James, Conglass, Inverurie
1880 Stephenson, Clement, V.S., Sandyford Villa, Newcastle
1879 Stephenson, J. B., Forteviot
1874 Stephenson, Richard, Chapel, Duns
1881 Steuart, Alan Henry Seton, Touch, Stirling
1845 Steuart, Andrew, of Auchlunkart, Keith
1881 Steuart, Charles Edward, Cleithaugh, Jedburgh
1857 Steuart, D., of Steuart Hall, Stirling, Herongate, Brentwood, Essex
1879 Steuart, D. K., Factor, Dupplin Estate Office, Munday, Aberdalgie, Perth
1835 STEUART, Sir Henry J. Seton, of Allanton, Bart , Touch, Stirling
1876 Steuart, H. J. Gow, Fowler's Park, Hawkhurst, Kent
1842 Steuart, James, W.S., 8 Doune Terrace, Edinburgh
1864 Steuart, James, junior, Dalkeith Park, Dalkeith
1880 Steuart, John, of Ballechin, Ballinluig
1859 Steuart, Patrick, Middlegill, Moffat
1864 Steuart, Captain Robert, of Westwood, West Calder
1855 Steuart, Robert, Dundale, Gravesend, Kent
1833 Steuart, William, London
1875 Stevenson, Alex. Shannon, of Ach-na-Cloick, Tynemouth, Northumberland
1855 Stevenson, Andrew, 37 Coates Gardens, Edinburgh
1882 Stevenson, D., 85 Constitution Street, Leith
1853 Stevenson, David, F.R.S E., Member of the Institution of Civil Engineers, 84 George Street, Edinburgh—*Consulting Engineer to the Society*
1882 Stevenson, John, Gateside, Denny
1882 Stevenson, John, Lillyhill House, Dunfermline
1853 Stevenson, John B., New Zealand
1864 Stevenson, John, Changue, Cumnock
1860 Stevenson, Robert, late Banker, Edinburgh
1852 Stevenson, Thos., Mount Lothian, Penicuik
1877 Stevenson, William, Holland, Stronsay, Kirkwall
1872 Stevenson, Wm., Lochgrog, Bishopbriggs
1860 Stewart, Alexander, Perth
1879 Stewart, Rev. Alex. M'Farlane, Inverchaolain, Greenock
1871 STEWART, Sir A. Douglas, of Grandtully, Bart., Perth
1881 Stewart, Chas., Gateside of Arngomery, Kippen
1858 Stewart, Charles, Tighnduin, Killin
1842 Stewart, David, London
1869 Stewart, David W., of Grange, Lockerbie
1870 Stewart, Donald, Chapel Park, Kingussie
1859 Stewart. Donald, Bruar, Blair Athole
1881 Stewart, Donald, Little Fardle, Meikleour
1870 Stewart, Duncan, Mosspeeble, Ewes, Langholm
1877 Stewart, Duncan, Loak, Bankfoot, Perthshire
1877 Stewart, Duncan, Bank of Scotland, Callander
1881 Stewart, Duncan, Monachyle, Callander
1863 Stewart, Commander Duncan, R.N., Stronvar, Campbeltown
1881 Stewart, Duncan D., Castlehill, Inchture

Admitted
1844 Stewart, G., Kirkchrist, Kirkcudbright
1881 Stewart, George M. F., of Binny, Linlithgow
1857 Stewart, H. G. Murray, of Broughton, Cally, Gatehouse
1871 Stewart, James, Blairfettie, Blair-Athole
1876 Stewart, James, Butcher, Coupar-Angus
1881 Stewart, James, Denovan House, Denny
1851 Stewart, J., Pitskelly, St Martin's, Perth
1858 Stewart, James, Heathfield, Irvine
1857 Stewart, James, Rossland, Bishopton
1873 Stewart, John, Bochastle, Callander
1854 Stewart, John, Burnside, Strathaven
1855 Stewart, John, Upper Ardroscadale, Rothesay
1852 Stewart, John, of Ensay, Scorrybreck, Portree
1878 Stewart, John, Manager, Home Farm, Ballindalloch
1879 Stewart, John, Land Steward, Glamis Castle, Glamis
1871 Stewart, Captain John C., of Fasnacloich, Ledaig
1853 Stewart, John Archd. Shaw, 13 Queen's Gate, London
1881 Stewart, John Lorne, of Coll, Argyllshire
1882 Stewart, Joseph, Crianlarich, Tyndrum
1869 Stewart, Mark John, of Southwick, Ardwell, Wigtownshire
1848 STEWART, Sir M. R. Shaw, of Greenock and Blackhall, Bart., Ardgowan, Greenock
1863 Stewart, Neil P., Vaynol, Bangor, North Wales
1859 Stewart, Osmand de Haviland, Creamore, Wem, Salop
1860 Stewart, Peter, Dornoch Mains, Annan
1858 Stewart, Robert, of Ingliston, Ratho
1873 Stewart, Robert, Kippenross, Dunblane
1846 Stewart, Robt. H. Johnstone, of Physgil, Glasserton, Whithorn
1881 Stewart, Robert K., of Murdostown Newmains, Lanarkshire
1857 Stewart, Samuel, Sandhole, Fraserburgh
1850 Stewart, William, Tonreoch, Campbeltown
1857 Stewart, William, late 24 Maclean Street, Plantation, Glasgow
1860 Stewart, William, Saddler, Aberfeldy
1878 Stewart, William, of Shambellie, Dumfries
1877 Stirling, Andrew, of Muiravonside, Linlithgow
1868 STIRLING, Sir C. E. F., of Glorat, Bart., Milton of Campsie
1864 Stirling, Captain Gilbert, Royal Horse Guards, London
1857 Stirling, Major Graham, of Craigbarnet, Lennoxtown
1867 Stirling, James, of Garden, Kippen, Stirling
1883 Stirling, John, of Fairburn, Beauly
1865 Stirling, Colonel John S., of Gargunnock, Stirling
1879 Stirling, Patrick, of Kippendavie, Dunblane
1881 Stirling, Robert, Pendreich, Bridge of Allan
1839 Stirling, T. Graham, of Strowan, Crieff
1855 Stirling, William, of Tarduf, Linlithgow
1867 Stobo, Andrew, Porterstown, Thornhill
1860 Stobo, Robert, of Hallidayhill, Auldgirth, Dumfries
1855 Stodart, David, Banker, Lanark
1875 Stodart, George, Netherton, Newton Mearns, Renfrewshire
1851 Stodard, John, late Cawder Cuilt, Fern, Maryhill

Admitted
1878 Stodart, J. A., Blairmore, Greenock
1880 Stodart, Thomas Tweedie, of Oliver, Rachan Mill, Biggar
1855 Stodart, William, Wintonhill, Tranent
1880 Storie, W. G. R., Lanton, Jedburgh
1861 STORMONT, Right Hon. Viscount, Scone Palace, Perth
1832 Stott, Gibson, 27 Victoria Street, Westminster, London
1883 Strachan, Alexander, Wester Fowlis, Alford
1874 Strachan, Andrew, Saphock, Old Meldrum
1878 Strachan, Charles, Tillyorn, Tarland
1876 Strachan, George, Inverebrie Mains, Ellon
1882 Strachan, John, Mains of Montcoffer, Banff
1858 Strachan, Lewis, Cluny of Raemoir, Banchory
1857 Strang, J., High Crewburn, Strathaven
1847†STRATHALLAN, Right Hon. Viscount
1878 Strathern, Robert, W.S., 12 South Charlotte Street, Edinburgh
1867†STRATHMORE, Right Hon. the Earl of, Glamis Castle, Glamis
1874 Stratton, David, 13 Middleby Street, Edinburgh
1883 Strother, Alex., Balmacree, Inverness
1878 Struthers, William, Logan Mains, Canonbie
1882 Stuart, Alexander, Muirhouse, Symington, Kilmarnock
1865 Stuart, Alexander, of Laithers, Turriff
1863 Stuart, Alexander C., of Eaglescairnie, Haddington
1873 Stuart, Charles, Tomindugle, Knockando, Craigellachie
1879 Stuart, Dugald, Tor Castle, Banavie
1881 Stuart, J. Windsor, Bute Estate Office, Rothesay
1849†SUTHERLAND, His Grace the Duke of, K.G., Stafford House, London
1876 Sutherland, Alexander, Rampyards, Watten, Golspie—*Free Life Member*
1853 Sutherland, Eric, Linkwood, Elgin
1849 Sutherland, George, of Forse, Springfield House, Dalkey, Co. Dublin
1871 Sutherland, George, The Peel, Tibbermuir, Perth
1865 Sutherland, James B. (of Lanehead, Dunscore), S.S.C., 10 Windsor Street, Edinburgh
1852 Sutherland, S., Springvale, Sheffield
1865 Sutherland-Walker, E. C., of Skibo, Skibo Castle, Sutherland
1877 Sutor, James, The Collie, Fochabers
1858 Swan, James, Live Stock Agent, 37 Lauriston Place, Edinburgh
1869 Swan, James, Inverpeffer, Carnoustie
1865 Swan, P. D., Provost of Kirkcaldy
1852 Swan, Robert, Writer, Kelso
1858 Swan, Thomas, Live Stock Agent, 37 Lauriston Place, Edinburgh
1871 Swan, William, Balhargie, Monifieth
1861 Swann, James, Collierhall, Douglas
1859 Swann, J. R., Dunedin, Otago
1865 Swanwick, R., Royal Agricultural College Farm, Cirencester
1857 Swinburne, Capt., R.N., of Eilan Shona. Strontian
1881 Swinton, Alan, Swinton House, Coldstream
1841 Swinton, Archibald Campbell, of Kimmerghame, Duns
1880 Swinton, John Liulf Campbell, yr. of Kimmergame, Duns
1862 Swinton, P. Burn, Holyn Bank, Gifford

Admitted
1853 Sydserf, Thomas Buchan, of Ruchlaw, Prestonkirk
1874 Syme, David, Manager of the Lawson Seed and Nursery Co., Limited, 1 George IV. Bridge, Edinburgh
1859 Syme, George, Milnathort
1875 Syme, James, Millbank, Edinburgh
1882 Syme, James Gordon, 33 Lauder Road, Grange, Edinburgh
1857 Syme, William, Craigie, Leuchars, Fife
1868 Symington, G. C., Kirkcarswell, Kirkcudbright
1876 Symington, James, Auctioneer, Lanark
1848 Symington, T., late Eastside, Penicuik
1868 Symington, Gilbert, Glenluce

1874 Tait, George, V.S., Elgin
1875 Tait, George, jun., V.S., Elgin
1880 Tait, George, Milnegraden Mains, Coldstream
1846 Tait, James, Banker, Kelso
1872 Tait, James, 26 Windsor Street, Edinburgh
1876 Tait, John, Crichie, Inverurie
1880 Tait, Joseph, late Kirknewton, Wooler
1863 Tait, William, Vencheon, Kelso
1862 Tait, William Reid, Mina Villa, Thurso
1878 Talbert, Peter, Glenericht, Blairgowrie
1862 Tawse, John, W.S., 11 Royal Terrace, Edinburgh
1859 Tawse, John Wardrope, W.S., 49 Queen Street, Edinburgh
1858 Tayler, W. J., of Glenbarry, Rothiemay House, Huntly
1877 Tayleur, Edward, of Dalskairth, Dumfries
1863 Taylor, Alexander, Pathhead, Ford
1858 Taylor, Geo., of Kirktonhill, Montrose
1876 Taylor, Hugh, Kamishill, Hurlford, Kilmarnock
1873 Taylor, James, Land Steward, Buchanan, Drymen
1876 Taylor, James, Toux, Mintlaw
1855 Taylor, John B., Seton West Mains, Prestonpans
1882 Taylor, John, Drimore, South Uist, Lochmaddy
1861 Taylor, John, Redcastle, Arbroath
1870 Taylor, Joseph, Potholm, Langholm
1853 Taylor, M., Letter Farm, Cove, Greenock
1857 Taylor, Robert, Drumfrenny, Banchory
1877 Taylor, Robert, Solicitor, Secretary Stirlingshire Agricultural Society, Stirling
1872 Taylor, Thos., Seed Merchant, Dalkeith
1880 Taylor, William, Park Mains, Inchinnan, Paisley
1857 Templeton, Robert, Rannachan, Campbeltown
1853 Tennant, C., of The Glen, M.P., Innerleithen
1881 Tennant, James, Vitriol Works, Carnoustie
1872 Tennant, T., of Priestgill, Strathaven
1876 Tennant, Thomas, Walston, Penicuik
1873 Terris, James, jun., Dullomuir, Blair Adam
1881 Tervit, John, Boat, Thankerton
1879 Theim, Albert M., Windsor Hotel, Princes Street, Edinburgh
1882 Thirsk, E. S., West Bush Oil Mills, Musselburgh
1877 Thom, Alex., Chapelhill, Peebles
1871 Thom, James, Leden Urquhart, Strathmiglo
1875 Thom, James F. Wellsgreen, East Wemyss, Fifeshire
1879 Thom, Robert Dick, Pitlochie, Gateside Strathmiglo

Admitted
1855 Thomas, James, Forthar, Kettle, Ladybank
1872 Thomas, William, of Pinnacle, Ancrum, Jedburgh
1871 Thompson, Alexander, Barmeal, Port William
1878 Thompson, Alexander, Ironmonger, Dumfries
1845 Thompson, Andrew, Berwick-on-Tweed
1878 Thompson, George, of Pitmedden, Dyce, Aberdeen
1867 Thompson, Henry, of High Green, Ramshope, Otterburn
1872 Thompson, John, Baillieknowe, Kelso
1874 Thoms, Geo. Hunter, of Aberlemno, Advocate, Sheriff of Caithness, Orkney, and Shetland, 52 Great King Street, Edinburgh
1867 Thomson, A., of Mainhill, St Boswells
1873 Thomson, Alex., The Lee, Innerleithen
1878 Thomson, Alex. M., Secretary Angus Agricultural Society, Arbroath
1880 Thomson, Andrew, 15 Inverleith Place, Edinburgh
1867 Thomson, Charles W., C.A., 16 Lennox Street, Edinburgh
1869 Thomson, Duncan M. (late Stirling), Chicago
1854 Thomson, George, late Haymount, Kelso
1863 Thomson, George, Hopton, Ancrum, Jedburgh
1855 Thomson, James, Mungoswalls, Duns
1858 Thomson, James, Land Valuator, 73 George Street, Edinburgh
1868 Thomson, Jas., Aberdeen
1879 Thomson, James, Coach Works, Stirling
1882 Thomson, James H., Knocknahaw, Campbeltown
1869 Thomson, John, Laggan, Gatehouse
1877 Thomson, John, Carronflats, Grangemouth
1869 Thomson, John, 49 Commerce Street, Glasgow
1875 Thomson, John, Prospect Hill, Cathcart
1877 Thomson, Rev. John, of Rosalee, Hawick
1880 Thomson, John, The Avenue, Berwick-on-Tweed
1848 Thomson, John Anstruther, of Charleton, Colinsburgh
1867 Thomson, John Comrie, Sheriff-Substitute of Aberdeen and Kincardine, Aberdeen
1874 Thomson, J. Grant, Wood Manager, Grantown, Strathspey
1869 Thomson, J. S., M'Cheynston, Dumfries
1870 Thomson, Lockhart, S.S.C., 114 George Street, Edinburgh
1873 Thomson, Mitchell, 12 Queen Street, Edinburgh
1859 Thomson, Peter, Conservative Club, Princes Street, Edinburgh
1880 Thomson, Peter, Seedsman, Alnwick
1874 Thomson, Robert, Burnbank, Blair-Drummond
1878 Thomson, Robert, of Brae, M'Cheynston, Dumfries
1882 Thomson, Seton, Kinnaird House, Larbert
1875 Thomson, Thomas, Bankhead, Alloa
1881 Thomson, Thomas, Cordon, Abernethy, Perthshire
1850 Thomson, Thomas, Merchant, Glasgow
1854 Thomson, W., 5 Torphichen Street, Edinburgh
1871 Thomson, Wm., Coachbuilder, Perth
1873 Thomson, Wm., Nyaad, Stirling
1875 Thomson, Wm., Aberdeen Town and County Bank, Tarland

Admitted
1878 Thomson, Wm., M'Murdieston, Dunscore, Dumfries
1872 Thomson, W. A., Oil Cake Mills, Leith
1875 Thomson, Wm. G., 49 Commerce Street, Glasgow
1841 Thomson, Wm. Thomas, 3 George Street, Edinburgh
1859 Thorburn, David, Calgary, Tobermory
1877 Thorburn, Robert, Stonehill, Lanark
1882 Thorneycroft, James Baird, Portland Iron Works, Kilmarnock
1869 Thornton, James, Hermand, West Calder
1883 THURLOW, Right Hon. Lord, Dunphail, Morayshire
1872 Thyne, John, 21 Danube Street, Edinburgh
1859 Thyne, Wm., 4 Spring Gardens, Stockbridge, Edinburgh
1844 Timins, Wm., late of Hillfield, Stanmore, Middlesex
1869 Tinning. John, Chillesford Lodge, Sudbourne Hall, Wickham Market, Suffolk
1859 Tod, Alexander, late Aikendean, Lasswade
1872 Tod, George, Cairneyhill, Dunfermline
1870 Tod, James, Glenkill, Lamlash
1877 Tod, James, Easter Cash, Strathmiglo
1869 Tod, James Carstairs, Gorgie Mains, Edinburgh
1870 Tod, John W., W.S., 66 Queen Street, Edinburgh
1870 Tod, Thos. M., West Brackly, Kinross
1851 Tod, William, Gospetry, Milnathort
1864 Tod, William, Glenree, Lamlash, Arran
1878 Todd, Alexander, Mouswald Grange, Dumfries
1876 Todd, David, 18 St Patrick Square, Edinburgh
1876 Todd, Gavin J., Thainstone, Kintore
1858 Todd, James, Gillespie, Glenluce
1865 Todd, James, Manitoba, Canada
1869 Todd, Wm., Auchiness, Ardwell
1878 Todd, Wm., Balsier, Sorbie, Garlieston
1881 Toplis, Robert, Glamis Hotel, Glamis
1871 Torrance, Archibald P., Kippielaw, Dalkeith
1863 Torrrance, George, Sisterpath, Duns
1877 Torrance, Thomas A., Burnhouse Villa, Camps, Wilkieston
1863 Torrance, T., Laws, Chirnside
1872 Torrance, William, Camps Lime Works, Wilkieston
1873 Torry, Adam Ogilvie, Forfar—*Free Life Member*
1877 Tough, James, Mains of Drum, Drumoak, Aberdeen
1877 Traill, Adam C., Bonnington Road, Leith
1880 Traill, James Christie, of Rattar, Caithness
1876 Traill, Thomas, of Holland, Kirkwall
1880 Traill, R. M., Hobbister, Orphir, Orkney
1846 Traquair, Ramsay H., Colinton, Slateford
1867 Trench, Henry, of Cangort Park, Roscrea, Ireland
1840 Trotter, Charles, of Woodhill, Blairgowrie
1865 Trotter, Coutts, 12 North Manor Place, Edinburgh
1865 Trotter, Lieut.-Colonel H., of Morton Hall, Edinburgh
1875 Trotter, Robert, Garguston, Inverness
1866 Trotter, T. C., 54 Park Street, Grosvenor Square, London, W.
1869 Trotter, Lieut.-Colonel R. A., of the Bush, Edinburgh
1875 Troup, Alexander, Strathmiglo

Admitted
1850 Tudhope, G., 62 Pollock Street, Glasgow
1878 Tuke, Dr J. Batty, Saughtonhall, Edinburgh
1873 Tulloch, James, Dales, Inverkeithing
1875 Tulloch, John, Midmains, Duffus, Elgin
1844 Turnbull, Alexander, Thornington, Cornhill-on-Tweed
1877 Turnbull, Archibald, Eldinhope, Yarrow, Selkirk
1874 Turnbull, David, W.S., 5 South Charlotte Street, Edinburgh
1878 Turnbull, David, of Brieryyards, Hawick
1881 Turnbull, George, Baldoukie, Tannadice, Forfar
1857 Turnbull, Gregor, Merchant, Glasgow
1881 Turnbull, James, Carnock Smithy, Larbert
1863 Turnbull, James, Lempitlaw, Eastfield, Kelso
1877 Turnbull, James, St Colme House, Aberdour, Fife
1880 Turnbull, James, Fauldshope, Selkirk
1844 Turnbull, John, of Abbey St Bathans, W.S., 49 George Square, Edinburgh
1863 Turnbull, John, East Middle, Hawick
1862 Turnbull, Mark, Melrose Mills, Melrose
1859 Turnbull, P., Little Pinkerton, Dunbar
1877 Turnbull, Peter M., Smithston, Rhynie
1850 Turnbull, S., Bonhill Place, Renton
1878 Turnbull, Thomas, Castlebank Mills, Dumfries
1877 Turnbull, Walter, Tynemont, Ormiston
1863 Turnbull, William J., Graden, Kelso
1872 Turnbull, William, Goukshill, Gorebridge
1863 Turnbull, William George, Spittal, Jedburgh
1875 Turner, Archibald, jun., Drumdrishaig, Ardrishaig
1853 Turner, D., Corachaive, Sandbank
1859 Turner, F. J., Mansfield Woodhouse, Mansfield, Notts
1853 Turner, John, of Turner Hall, Ellon
1873 Turner, Peter, Balsam Grove, Drumquin, Ontario, Canada
1876 Turner, Robert, Auchnarrow, Ballindalloch
1868 Turner, William, M.B., Professor of Anatomy, University of Edinburgh, 6 Eton Terrace
1879 TWEEDDALE, Most Noble the Marquis of, Yester, Haddington
1869 Tweeddale, George W., Ivy Hill, Warminster, Nelson County, Virginia, U.S.
1859 Tweedie, Alexander, Coats, Haddington
1873 Tweedie, Alexander. Gladstone, Glespin, Douglas, Lanarkshire
1860 Tweedie, James, of Quarter, Rachan House, Biggar
1875 Tweedie, James, Tyninghame, Prestonkirk
1871 Tweedie, Richard, The Forest, Catterick
1855 TWEEDMOUTH, Right Hon Lord, Guisachan, Beauly
1878 Twentyman, John Murthwaite, Blennerhasset, Aspatria, Carlisle
1883 Tytler, Edward G. F., of Aldourie, Inverness
1868 Tytler, James Stuart, of Woodhouslee, W.S,, 36 Melville Street, Edinburgh

1873 Udny, John Henry Fullarton, of Udny and Dudwick, Udny, Aberdeen
1877 Underwood, Peter, Braelangwell Mains, Invergordon
1877 Unite, John, 291 Edgeware Road, London, W.
1875 Ure, George Wheatlands, Bonnybridge

Admitted
1875 Ure, George R., Hope Park, Bonnybridge
1882 Ure, Hon. John, Lord Provost of Glasgow
1874 Ure, William, Bogton, Larbert
1864 Ure, William, 67 Wallace Street, Stirling
1864 Urquhart, B. C., of Meldrum, Old Meldrum
1876 Urquhart, Captain F. Pollard, of Craigston, Turriff
1858 Urquhart, J. G., of Vellore, Linlithgow
1882 Urquhart, Robert, jun., Forres
1853 Usher, John, Stodrig, Kelso
1872 Usher, J., jun., Gatehousecote, Hawick
1872 Usher, Thomas, jun., Courthill, Hawick

1876 Vallentine, George, 55 Southesk Street, Brechin
1858 Vallentine, J., Nether Afflock, Dunecht
1877 VANE, Sir Henry Ralph, of Hutton in the Forest, Bart., Penrith
1860 Vassal, Lieut.-General R., 9 Westbourne Street, London
1878 Veitch, Andrew, Girthon Kirk, Gatehouse-on-Fleet
1864 Veitch, Chris,, 24 Queen Street, Edinburgh
1867 Veitch, Walter, Grange, Kinghorn
1856 Vere, C. E. Hope, late Ledard, Aberfoyle
1882 Vere, James C. Hope, of Craigie Hall and Blackwood, Lesmahagow
1867 VERNON, Hon. Greville R., Auchans House, Kilmarnock
1873 Villiers, Frederick Ernest, Closeburn Hall, Thornhill

1880 Waddell, Alexander, of Palace, Jedburgh
1874 Waddell, A. Peddie, 4 Great Stuart Street, Edinburgh
1874 Waddell, James, Airdriehill, New Monkland
1872 Waddell, John, of Easter Inch, 34 St Andrew Square, Edinburgh
1869 Waddell, John, Southrigg, Bathgate
1869 Waddell, Wm., Netherton, Whitburn
1857 Wakefield, J. Collen, late Eastwood, Thornliebank
1857 Wakelin, John, Oil Mills, Musselburgh
1877 Walcot, John (G. M'Callum & Co.), 13 Greenside Place, Edinburgh
1880 WALDIE-GRIFFITH, Sir George, of Hendersyde Park, Bart., Kelso
1873 Walker, Alexander, of Findynate, Ballinluig
1870 Walker, Alexander, Stagebank, Heriot
1872 Walker, Alexander John (Bowland), 3 Manor Place, Edinburgh
1878 Walker, Archibald, Banker, Auchtermuchty
1847 Walker, Charles (late Drumblair), Australia
1861 Walker, Fountaine, of Ness Castle, Inverness
1857 Walker, Francis, Craignetherty, Turriff
1881 Walker, George, Factor, South Uist
1858 Walker, Lieut.-Col. George G., of Crawfordton, Thornhill
1875 Walker, George A., Novar Mains, Evanton
1868 Walker, G. J. (Walker & Beattie, Land Surveyors, Aberdeen), Portlethen, Aberdeen
1860 Walker, James, of Dalry, Hanley, Corstorphine
1867 Walker, James, Grassmere, Stonewall, Winnipeg, Manitoba, Canada
1877 Walker, James, West Side of Brux, Kildrummy, Aberdeen
1857 Walker, John, late Eastfield, Springburn
1862 Walker, John, Cape of Good Hope Government Offices, London

Admitted
1872 **Walker, J. P. S., Veterinary Establishment, Littlegate, Oxford**
1859 **Walker, Robert, Altyre, Forres**
1861 **Walker, Robert (late Muirhall, Perth), San Francisco**
1874 **Walker, Robert S. (Mains of Portlethen), Queensland**
1882 **Walker, Robert Houston, of Hartwood, West Calder**
1875 **Walker, Thomas, Demperston, Auchtermuchty**
1861 **Walker, Thomas R., Cupar Fife**
1859 **Walker, W., South Quarter, Kingsbarns**
1858 **Walker, Wm., Ardhunckart, Mossat**
1864 **Walker, Wm., Kintrae, Elgin**
1882 **Walker, Wm., Home Farm, Garliestown**
1872 **Walker, Wm., Horse Dealer, Stirling**
1835 **Walker, Wm. S., of Bowland, C.B., 125 George Street, Edinburgh—*Treasurer of the Society***
1868 **Walker, Wm. Campbell, yr. of Bowland**
1878 **Wall, George Y., Durham—*Free Life Member***
1882 **Wallace, George, Banker, Cupar Fife**
1878 **Wallace, Henry Ritchie Cooper, of Busbie and Cloncaird, Ayrshire, 21 Magdala Crescent, Edinburgh**
1882 **Wallace, Hugh, Lancefield Boiler Works, Glasgow**
1861 **Wallace, James, Brake, St Andrews**
1881 **Wallace, John, Hailes, Haddington**
1861 **Wallace, John, late Illieston, Broxburn**
1882 **Wallace, John, of Glassengall, Dunblane**
1882 **Wallace, John, Stonelaw, Rutherglen**
1879 **Wallace, J., Foundry, Castle Douglas**
1875 **Wallace, Robert, Auchenbrain, Mauchline**
1854 **Wallace, Robert A., Rhynd, Dunfermline**
1882 **Wallace, Robert H., Rosa, N.W.P., India**
1870 **Wallace, R., Langbarns, Kirkcudbright**
1878 **Wallace, Robert, Twiglees, Lockerbie—*Free Life Member***
1879 **Wallace, R., Foundry, Castle-Douglas**
1880 **Wallace, Thomas Alex., Banker, Burntisland**
1879 **Wallace, Wm., (John Wallace & Sons), Graham Square, Glasgow**
1875 **Wallace, Wm., Kinnear, Kilmany, Cupar Fife**
1871 **Wallace, Wm., of Newton of Collessie, Ladybank**
1854 **Wallbank, Jonas, Berwick-on-Tweed**
1872 **Walley, Thomas, M.R.C.V.S., Principal of the Veterinary College, Edinburgh—*Professor of Cattle Pathology to the Society***
1877 **Walls, James, Lochran, Kinross**
1873 **Walls, Robert, Kerse Mills, Stirling**
1845 **WALPOLE, The Hon. Henry, Wolterton Park, Aylsham, Norfolk**
1873 **Walton, George Kemp, Long Campton, Shipston-on-Stour, Warwickshire—*Free Life Member***
1869 **Wardrop, W. M., Williamfield, Portobello**
1874 **Wardrope, Robert, Garlaff, Cumnock**
1852 **Warnock, A., Bearyards, Bishopbriggs**
1862 **Warrack, Wm., Newmill of Fintray, Aberdeen**
1868 **Warrand, Major A. J. C., Ryefield, Ferrintosh, Dingwall**
1858 **WARRENDER, Sir G., of Lochend, Bart., Bruntsfield House, Edinburgh**
1879 **Warwick, A. Outer Woodhead, Canonbie**

Admitted
1856 **Warwick, W., Glencartholm, Canonbie**
1871 **Waters, George S., Tistermains, Halkirk Road, Caithness**
1837 **Waterston, Charles, Inverness**
1869 **Watherston, Jas., 29 Queensferry Street, Edinburgh**
1869 **Watherston, Wm., 29 Queensferry Street, Edinburgh**
1882 **Watson, Adam (of Oggs Castle), 23 Union Street, Edinburgh**
1875 **Watson, Arthur, 416 Crown Street, Glasgow**
1855 **Watson, Crawford, late The Lone, Tenbury, Worcestershire**
1859 **Watson, Douglas (late Thurster, Wick), New Zealand**
1876 **Watson, George, Edendiack, Gartly**
1876 **Watson, George, of Norton, Ratho**
1870 **Watson, George, late Fushiebrae, Gorebridge**
1882 **Watson, Graham Gilbert, W.S., 45 Charlotte Square, Edinburgh**
1878 **Watson, James Graham, 45 Charlotte Square, Edinburgh**
1870 **Watson, James M., 2 Fingal Place, Edinburgh**
1857 **Watson, John, of Earnock, Hamilton**
1864 **Watson, John, Culterallers, Biggar**
1883 **Watson, John, 205 West George Street, Glasgow**
1877 **Watson, John, Skipperton, Denny**
1864 **Watson, John Paton, of Blackford, Rothienorman**
1872 **Watson, Patrick, late Friarstown House, Tullaught, County Dublin**
1852 **Watson, Wm. (late The Binns), Beecher Wills, Illinois, U.S.**
1841 **Watson, William, Inchcoonans, Errol**
1880 **Watson, William, Ochterlony Mains, Forfar**
1863 **Watson, W. S., of Burnhead, late Bucklands, Hawick**
1873 **Watt, Alex., Balbarton, Kirkcaldy**
1871 **Watt, George, Kilmany, Cupar Fife**
1868 **Watt, Gordon, Mains of Park, Drumoak**
1875 **Watt, James, Garbity, Orton, Fochabers**
1878 **Watt, James (Little & Ballantyne), Knowfield, Carlisle**
1879 **Watt, James, Pitdinnie, Cairniehill, Dunfermline**
1880 **Watt, John, Drumgray, Airdrie**
1875 **Watt, Robert, Solicitor, Airdrie**
1878 **Watt, W. G. T., Kierfiold House, Stromness**
1882 **Watt, William, Seed Merchant, Cupar Fife**
1873 **Wauch, John, Langshaw, Galashiels**
1842 **WAUCHOPE, Sir John Don, of Edmonstone, Bart., Edmonstone House, Liberton**
1882 **Wauchope, John Douglas Don, yr. of Edmonston, Liberton**
1871 **Waugh, Allan, Avonbridge, Falkirk**
1875 **Waugh, John, Glenormiston, Innerleithen**
1877 **Weatherhead, Wm., Bogangreen, Coldingham**
1881 **Weber, F. H., Estate Office, Escrick, York—*Free Life Member***
1881 **Webster, James, Mungal Mill, Larbert**
1863 **Webster, J., New Horndean, Berwick**
1870 **Webster, Robt., Airds of Kells, New Galloway Station**
1863 **Weddell, John Wilkie, Lauder Barns, Lauder**
1874 **Wedderburn, Henry Scrymgeour, of Wedderburn, Birkhill, Cupar Fife**
1881 **Wedderspoon, George, Balgavies, Forfar**

Admitted
1881 Wedderspoon James, 88 Bath Street, Glasgow
1881 Wedderspoon, Thomas, Live Stock Salesman, Perth
1882 Weir, Alexander, Gallowhill, Campbeltown
1877 Weir, James, Sandilands, Lanark
1864 Weir, Robert, Sandilands Cottage, Lanark
1873 Weir, William, Inches, Larbert
1868 Weir, William, Portland Iron Works, Kilmarnock
1850 Welsh, Alexander, Waughton, Prestonkirk
1869 Welsh, Henry, 6 George Street, Edinburgh
1860 Welsh, John, Kirkton, Hawick
1881 Welsh, Patrick, Procurator-Fiscal, Stirling
1842 Welwood, Alan A. Maconochie, of Garvoch, Meadowbank, Kirknewton
1847 **Wemyss** and **March**, Right Hon. the Earl of, Gosford, Haddington
1880 Wemyss, David Watson, Newton Bank, St Andrews
1872 Wemyss, R. G. E., of Wemyss, Kirkcaldy
1863 **Wharncliffe**, Right Hon. Lord, 15 Curzon Street, London
1863 White, A., Kelloe Mains, Edrom
1880 White, E. C., Ayton Law, Ayton
1862 White, Francis, M.D., Perth
1863 White, James, of Overton, Dumbarton
1876 White James, Stagehall, Stow
1873 White, John, Ardencaple, Helensburgh
1872 White John A., Shiells Mains, Biggar
1868 White, J. F., Grain Merchant, Aberdeen
1842 White, Robert, W.S., 23 Drummond Place, Edinburgh
1872 White, Robert, Outerston, Gorebridge
1854 White, Wm., of Mousebank, Lanark
1872 White, Wm., Lennel Hill, Coldstream
1882 Whitelaw, Alexander, of Gartshore, Leckie House, Stirling
1850 Whittet, Geo., Easter Drylaw, Davidson's Mains
1861 Whitton, Andrew, of Couston, Newtyle
1871 Whyte, Angus, Easdale, Oban
1870 Whyte, Arch., jun., Sidlaw House, Newtyle, Coupar-Angus
1876 Whyte, Duncan, 326 Duke Street, Glasgow
1876 Whyte, D. C., Ballimore, Lochstrivenhead, Sandbank
1865 Whyte, James, Aldbro, Darlington
1870 Whyte, James A., Kirkmabreck, Stranraer
1882 Whyte, John, Advocate, Aberdeen
1853 Whyte, John, Ballochyle, Sandbank
1871 Whyte, John, West Dunoon, Meigle
1875 Whyte, John, Lundin Mill, Largo
1860 Whyte, Rev. R. Dryfesdale, Lockerbie
1868 Whyte, William, Spott, Kirriemuir
1870 Wight, Alex., Ironmonger, Forres
1865 Wight, George, 14 Duke Street, Edinburgh
1872 Wight, R. B., late Wester Melville, Lasswade
1878 Wight, Thomas, Pilmuir, Lauder
1869 Wightman, John Seton, of Courance, 7 Darnaway Street, Edinburgh
1873 Wilken, George, Waterside of Forbes, Alford
1843 Wilkie, D., of Auchlishie, Kirriemuir
1879 Wilkie, David, Castle Campbell Hotel, Dollar
1857 Wilkie, George, Cowdenlaws, Dysart
1881 Wilkie, James, Solicitor, Kirriemuir
1830 Wilkie, John, of Foulden, Berwick
1879 Wilkin, Robert, Christ's Church, New Zealand
1862 Wilkin, T., Tinwald Downs, Dumfries
1873 Will, Robert W., S.S.C., 37 Queen Street, Edinburgh
1872 Willacy, Robert, Penwortham Priory, Preston
1877 Williams, John, Phœnix Works, Rhuddlan Rhyl
1878 Williams, Robert, The Green, Wishaw
1867 Williams, W., Principal of the New Veterinary College, Edinburgh—*Professor of Veterinary Surgery to the Society*
1881 Williams, W. O., New Veterinary College, Edinburgh
1878 Williamson, Miss Katherine Isabella of Cardrona, Peebles
1879 Williamson, Alex., Sypland, Kirkcudbright
1858 Williamson, Andrew F., Pitcaple, Aberdeen
1861 Williamson, Colonel David Robertson, of Lawers, Crieff
1871 Williamson, D. G., Mayfield, Castle-Douglas
1850 Williamson, George, -Shempston, Elgin
1878 Williamson, James, Greenhead, Wishaw
1875 Williamson, Robert, Netherwood, Banff
1871 Williamson, Thomas, Merchant, Kirkcudbright
1854 Willis, Thomas, Manor House, Carperby, Bedale
1882 Willison, Alexander, Townend, Dalry, Ayrshire
1868 Willison, Duncan Campbell, Dalpeddar, Sanquhar
1873 Willison, Geo., Ardlarach House, Luing, Easdale, Oban
1857 Willison, Jas. P., of Cultezeun, Maxwelton, Maybole
1858 Willison, John, Parish Holm, Douglas
1868 Willison, J., jun., Acharn, Killin
1854 Wilson, Alex., Kirkhill, Old Meldrum
1864 Wilson, Alexander, Alford House, Dunblane
1864 Wilson, Alexander, of Skeoch, Bannockburn
1882 Wilson, Dr Alexander, Ivy Bank, Mid-Calder
1881 Wilson, David, jun., of Carbeth, Killearn
1864 Wilson, Edward L., Manufacturer, Bannockburn
1882 Wilson, George, Cattle Dealer, Gladstone Cottage, Cupar Fife
1863 Wilson, George, Manufacturer, Hawick
1872 Wilson, George, Greenhill, Selkirk
1876 Wilson, George, Whiteside, Alford, Aberdeen
1880 Wilson, George, junior, Dalveen, Thornhill
1880 Wilson, George, Druggist, Coldstream
1882 Wilson, George M., Merchant, West Lodge, Pollokshields
1859 Wilson, Jacob, Chillingham Barns, Alnwick—*Free Life Member*, 1873
1871 Wilson, James, Boghall, Bishopton
1881 Wilson, James, Burnetland, Biggar
1844 Wilson, James, Glasgow
1858 Wilson, James, Banker, Kilmarnock
1857 Wilson, James, jun., Saddell Street, Campbeltown
1860 Wilson, James, Bemersyde West, St Boswells
1877 Wilson, James, Mains of Scotstown, Bridge of Don, Aberdeen
1883 Wilson, James Hodge, S.S.C., Oban
1870 Wilson, James R., Banker, Sanquhar
1851 Wilson, John, Wellnage, Duns

Admitted
1855 Wilson, John, Professor of Agriculture, University of Edinburgh
1865 Wilson, John, Castle Park, Huntly
1875 Wilson, John, Lecropt, Bridge of Allan
1876 Wilson, John, of Finnich Malise, 22 Oswald Street, Glasgow
1859 Wilson, John, of Auchineck, Killearn
1878 Wilson, John, of Alderston, Mid-Calder
1882 Wilson, John, Priestgill, Strathaven
1878 Wilson, John, West Freuch, Stranraer
1879 Wilson, John, jun., Fairfield, Lorton, Cockermouth—*Free Life Member*
1879 Wilson, John J., Clydesdale Bank, Penicuik
1859 Wilson, J. F., Darnhall Mains, Eddleston
1862 Wilson, J., Chapelhill, Cockburnspath
1833 Wilson, J. P., of Polquhairn, Ochiltree, Cumnock
1865 Wilson, Peter, Linsaig, Tigh-na-bruaich
1870 Wilson, Peter, Noblehall, Lamancha
1880 Wilson, Peter, Seed Crusher, Burntisland
1878 Wilson, Peter M'C., Nether Gribton, Dumfries
1857 Wilson, Philip, Corn Factor, Duns
1858 Wilson, Richard, C.A., 28 Great King Street, Edinburgh
1852 Wilson, Robert, Cove Gardens, Greenock
1863 Wilson, Robert, Manswraes, Kilbarchan
1882 Wilson, Robert Main, Fod Bank House, Dunfermline
1857 Wilson, Thomas, late Auchincorrie, Campbeltown
1882 Wilson, Thomas, Murrayshall Lime Works, Stirling
1878 Wilson, Thomas Mackay, Solicitor, Kirriemuir
1877 Wilson, William, of Banknock, Denny
1873 Wilson, William (Picksley, Sims, & Co.), Leigh, Lancashire
1858 Wilson, William, Dyson House, Waltham Cross, Herts
1879 Wilson, William, Water Meetings, Abington
1871 Wilson, William, Wolfstar, Tranent
1878 Wilson, William, Butknowe, Sanquhar
1881 Wilson, William, Bannockburn House, Bannockburn
1880 Wilson, W. B., Remenham Farm, Henley-on-Thames
1873 Wilsone, Thomas, Solicitor, Aberdeen
1877 Wingate, Andrew, Castlehill, Wishaw
1877 Wishart, D. F., Catherine Street Court, Edinburgh
1855 Wishart, Edward, 1 York Road, Trinity
1868 Wishart, W., Cairntradlyn, Blackburn, Aberdeen
1878 Wither, James, Lagganmore, Portpatrick
1860 Woddrop, William Allan, of Dalmarnock, Dolphinton
1874 Wood, Christopher, Kintrochat House, Brechin
1873 Wood, Collingwood Lindsay, of Freeland, Bridge of Earn
1858 Wood, James, Crown Street, Aberdeen
1864 Wood, J., Whiteside, Greenlaw, Duns
1875 Wood, James, 478 Duke Street, Glasgow
1873 Wood, Walter A., 36 Worship Street, London, E.C.
1877 Wood, Major William, Factor, Falkland
1881 Woodroffe, D. (Albion Iron Works Co.), Chase View, Rugeley, Staffordshire
1876 Wordsworth, R. W., West Dean, Chichester
1858 Wotherspoon, Archibald (late Spotsmains, Kelso), West Oxford, Canterbury, New Zealand

Admitted
1877 Wragg, Charles, Grain Merchant, 4 Stockwell Street, Glasgow
1857 Wright, Bryce, Dowhill, Girvan
1850 Wright, David, Ravenswood, South Oswald Road, Edinburgh
1882 Wright, Robert P., Downan, Ballantrae—*Free Life Member*
1877 Wright, Thomas, Bengall, Lockerbie
1878 Wyatt, Sydney, Nydie Mains, St Andrews
1870 Wyllie, Alexander, Bolton, Haddington
1875 Wyllie, Alexander, W.S., 21 Castle Street, Edinburgh
1863 Wyllie, James, Factor, Inveraray
1874 Wyllie, James, Innerwick, Dunbar
1849 Wyllie, J., late Newfarm, Mid-Calder
1855 Wyllie, W. A., late 14 West End Park Street, Glasgow
1874 Wyllie, William, Princes Street, Perth
1878 Wyllie, Wm., Pleasance of Cargen, Dumfries
1882 Wyse, Dr, Bridge of Allan
1880 Wyse, G. B. M., 11 Northumberland Street, Edinburgh

1868 Yeats, Alex., Advocate, 89 Union Street, Aberdeen
1838 Yeats, William, of Aquharney, Beaconshill, Aberdeen
1864 Yool, Thomas, Caldcoats, Elgin
1864 Yorstoun, Captain M. C., of Tinwald, Irvine House, Langholm
1852 Young, Alex., Keir Mains, Dunblane
1867 Young, Andrew, 21 Park Crescent, Stirling
1859 Young, Andrew, Lochtyside, Thornton, Kirkcaldy
1881 Young, Arch., Advocate, 22 Royal Circus, Edinburgh
1854 YOUNG, Hon. Lord, 28 Moray Place, Edinburgh
1877 Young, D. S., Bonnington, North Berwick
1873 Young, Geo., Auctioneer, Dollar
1843 Young, Harry, of Cleish Castle, Kinross
1876 Young, Hugh, Killoch, Neilston
1856 Young, Jas., Broadholm, Duntocher
1860 Young, J. A., Orchardtown, Garliestown
1863 Young, James, of Kelly, Wemyss Bay
1876 Young, James, yr. of Kelly, Wemyss Bay
1881 Young, James, Mungal Farm, Larbert
1871 Young, James, Waterton, Elgin
1875 Young, James, Cadboll, Fearn
1868 Young, John, jun. (J. & T. Young), Ayr
1876 Young, John, Hailes Cottage, Slateford
1857 Young, John, Netherwood Bank House Dumfries
1879 Young, John, Cobblebrae, Falkirk
1863 Young, Matthew, Oilcake Mills, Berwick-on-Tweed
1869 Young, Robert, Greenlees, Cambuslang
1882 Young, Robert, Merchant, 24 St Vincent Crescent, Glasgow
1879 Young, Robert W. (of Colinswell, Fifeshire), Rockhall, Dumfries
1872 Young. Thomas, Oatridge, Linlithgow
1876 Young, William Stirling, Keir Mains, Dunblane
1873 Young, Wm., Taylorton, Stirling
1878 Young, Wm., Shields, Monkton, Ayr
1873 Young, Wm., Waterbank, Carmunnock
1879 Younger, George, Brewer, Alloa
1870 Younger, Henry J. (Abbey Brewery, Edinburgh), 28 Chester Terrace, Regent's Park, London
1875 Younger, J. B. B. C., Bankhead, Leven, Fife

Admitted
1863 Younger, Robert, 15 Cartlon Terrace, Edinburgh
1863 Younger, Wm., Auchen Castle, Moffat
1870 Yuill, Archibald, Netherside, Strathaven

Admitted
1869 Yule, Edward, Balgone, North Berwick
1868 Yull, John S., Little Ardo, Methlick

1877 ZETLAND, Right Hon. the Earl of, Aske, Richmond, Yorkshire

TOTAL NUMBER OF MEMBERS, 4910.

HONORARY MEMBERS.

HONORARY ASSOCIATES.

1874 Dahl, Ferdinand August, Aas, Christiana
1874 Holst, Christian, Norwegian Court Paymaster.

LIST OF DIPLOMA FREE LIFE MEMBERS.

By a Bye-Law passed in 1873, with reference to the Supplementary Charter of 1856, successful Candidates for the Society's Agricultural Diploma are thereby eligible to be elected Free Life Members of the Society.

In 1882, the holders of the Diploma memoralised the Council, pointing out the want of some distinctive title attached to the Diploma, and praying that the title F.H.A.S. (Fellow of the Highland and Agricultural Society of Scotland) be granted to them. The Council acceded to the prayer of the Memorial.

Admitted
1879 Aitken, John M., 24 St Andrew Square, Edinburgh
1882 Alexander, A. S., Dysart, Tama, Co. Iowa
1876 Anderson, R. Lang, Assam, India
1873 Ashdown, A. H., M.R.A.C., Uppington, Salop

1875 Beck, Thos, Coker, M.R.A.C., Crowell Rectory, Tetsworth, Oxon
1878 Bramwell, John, Blackaddie, Sanquhar
1873 Brown, William, Earlsmill, Forres
1873 Browne, Colvile, M.R.A.C., Park House, Long Melford, Suffolk
1873 Brydon, Robert, The Dene, Seaham Harbour
1874 Burn, Forbes, Hardacres, Coldstream
1882 Buttar, Thomas A., Corston, Coupar-Angus

1873 Campbell, George, Kilkea, Mageney, Co. Kildare
1879 Cannon, James, Urioch, Castle-Douglas
1878 Carr, Robert, Felkington, Norham, Berwick-on-Tweed
1879 Craig, John, Innergeldie, Comrie
1880 Craig, Wm., Monktonhill, Monkton

1873 Eley, Rev. Dr Wm. Henry, Etchingham Rectory, Hawkhurst, Kent
1883 Elliot, Thomas John, M.R.A.C., Bridge House, Southwick, Fareham, Hants
1882 Ensor, Thomas Henry, 54 South Street, Dorchester
1874 Erskine, Henry

1876 Ferguson, Archd. A., 198 High Street, Portobello

1873 Giglioli, Italo, M.R.A.C., Florence
1873 Goddard, H. R., M.R.A.C., Belsay, Newcastle-on-Tyne
1881 Gover, Lawford D., Findon, Worthing

1878 Henderson, John, East Elrington, Haydon Bridge
1874 Henderson, Richard, The Grange, Kirkcudbright
1881 Henderson, Wm., East Elrington, Haydon Bridge
1873 Hill, Arthur James, M.R.A.C., Accountant, 86 Landsdowne Road, London, W.
1879 Hunt, Arthur E. Brooke (B.A., Trin. Col. Cam.), Peers Court, Dursley, Gloucestershire

1873 Juckes, R. F., M.R.A.C., Cotwall, Wellington, Salop

Admitted
1875 Kennedy, William, M.R.A.C., 89 Marine Parade, Brighton

1878 M'Connell, Primrose, 14 Carrick Park, Ayr
1878 M'Cracken, William, Blackhall, Kirkwhelpington, Newcastle-on-Tyne
1876 Maconchy, John Arthur, M.R.A.C., Corrinagh, Torquay
1880 Martin, Wm., Dardarroch, Dumfries
1873 Milne, John, Mains of Laithers. Turriff
1873 Munby, Edward Charles, M.R.A.C., Myton Grange, Helperby, Yorkshire
1875 Murdoch, George Burn, M.R.A.C., St Brides, Morningside, Edinburgh
1875 Murray, Robert W. E., Wester House Byres, Galashiels

1878 Nonnen, John Edward, 36 Leamington Terrace, Edinburgh
1873 Norman, Wm., M.R.A.C., Hall Bank, Aspatria
1882 Norrie, William, Cairnhill, Montquhitter, Turriff

1877 Pudney, R. L., M.R.A.C., Earl's Colne, Halstead, Essex

1882 Reid, Peter, Waulkmilton, Linlithgow
1873 Rome, Thomas, M.R.A.C., Northampton Downs, Braco River, Queensland

1881 Sandison, Marcus, Hempriggs, Wick
1878 Sharp, John Johnstone, Leaston, Upper Keith
1882 Smith, E. Hedley, B.L., Whittinghame, Prestonkirk
1873 Smith, William B., M.R.A.C., Stoneleigh Villa, Leamington
1876 Sutherland, Alex., Rampyards, Watten, Golspie

1873 Torry, Adam Ogilvie, Forfar

1873 Wall, G. Y., M.R.A.C., Durham
1878 Wallace, Robert, Twiglees, Lockerbie
1873 Walton, George Kent, Long Camptown, Shipston-on-Stour, Warwickshire
1881 Weber, Frederick Herman, Estate Office, Escrick, York
1878 Wilson, Jacob, M.R.A.C., Chillingham Barns, Alnwick
1879 Wilson, John, Fairfield, Lorton, Cockermouth
1882 Wright, Robert P., Downan, Ballantrae, Ayrshire

APPENDIX (D).

LIST OF MEMBERS

OF

THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND,

ARRANGED ACCORDING TO COUNTIES,

1883.

Members finding any mistakes in the following List are requested to report the same to Mr F. N. Menzies, 3 *George IV. Bridge, Edinburgh.*

LIST OF MEMBERS

ARRANGED ACCORDING TO COUNTIES.

ABERDEEN.

ABERDEEN, The Earl of
Adam, Thomas, National Bank, Aberdeen
Ainslie, Ainslie Douglas, of Delgaty Castle, Turriff
Ainslie, Wm., Pitfour, Mintlaw
Alexander, George, South Balnoon, Huntly
ANDERSON, Sir Alexander, Aberdeen
Anderson, George, Advocate, Aberdeen
Anderson, John, Craigton, Banchory
Anderson, John, Mill of Wester Coull, Tarland
Anderson, John M., Huntly
Anderson, Robert, Daugh, Tarland
Anderson, William, Wardes, Kintore
Anderson, Wm., Wellhouse, Alford
Argo, James, Cairdseat, Udny
Auld, R. C., 247 Union Street, Aberdeen
Barclay, C. A., Aberdour House, Fraserburgh
Barclay, George, Strocherie, Banff
Barclay, J. W., M.P., 60 Dee Street, Aberdeen
Bean, Alex., Netherthird, Rothienorman
Bean, George, Balquhain, Inverurie
Bean, Wm., Newton, Cairnie, Huntly
Beaton, James, Monyruy, Longside
Beattie, James A., C.E., Aberdeen
Beedie, James, The Mains, Ardlaw, Fraserburgh
Bell, John, Tyrie Mains, Fraserburgh
Benton, Joseph, Harthill, Whitehouse
Benton, William, Cattie, Whitehouse
Black, G., Mill of Craibston, Newhills, Aberdeen
Bowman, James, Square, Huntly
Brebner, Alexander, Balquhindochy, Methlick
Brebner, Robert, Lumbs, Lonmay, Aberdeen
Brown, Archibald, Craig, Udny
Brown, Joseph, Little Endovie, Alford
Bruce, Alexander, Millhill, Mintlaw
Bruce, David C., Broadlands, Huntly
Bruce, George, Pennan Farm, Fraserburgh
Bruce, George, Heatherwick, Keith Hall
Bruce, G., 35 Market Street, Aberdeen
Bruce, James, Collithie, Gartly
Bruce, J., Inverquhomery, Mintlaw
Bruce, Peter, Myreton, Insch, Aberdeen
Burr, Alexander, Tulloford, Old Meldrum
Burr, John M., Netherton, Fyvie, Aberdeen
Calder, R., Whitehouse, Lumphanan
Campbell, Alex., Belmont, Aberdeen
Campbell, Silvester, Kinellar, Blackburn
Campbell, Silvester, jun., Tofthills, Aberdeen
Chambers, W., Soutarton, Forgue, Huntly
Charles, John, Town and County Bank, Inverurie
CLARK, Sir John F., of Tillypronie, Bart., Tarland
Clarke, William, Hopewell, Tarland
Cochrane, James, Waterside Lodge, Newburgh
Cook, Charles, 17 Golden Square, Aberdeen
Cook, T. W., Castleton of Asloun, Alford
Copland, Alex., Commercial Co., Aberdeen
Copland, Robt., Mill of Ardlethen, Ellon
Cordiner, W. F., Mormond House, Cortes
Coupar, J. C., of Craigiebuckler, Aberdeen
Cowie, Alex., Darley, Auchterless, Turriff
Cowie, Alex., Crombly Bank, Ellon
Craig, William, Old Meldrum
Cran, George, Old Morlich, Inverkindie
Cran, James, jun., Knockandoch, Whitehouse
Cruickshank, Amos, Sittyton, Aberdeen
Cruickshank, Andrew, Conland, Huntly
Cruickshank, E. C., Lethenty, Inverurie
Cruickshank, George, Comisty, Huntly
Cruickshank, J., Ladysford, Fraserburgh
Cruickshank, J. W., Elrick House, Summerhill
Cruickshank, Wm., Woodhead, Cairness
Dakers, James, 24 Union Row, Aberdeen
Dalrymple, C. E., of Kinellar Lodge, Blackburn
Davidson, A., Mains of Cairnbrogie, Old Meldrum
Dewar, Alex., Bethlin, Cluny
Douglass, A. F., Haddo House Mains, Aberdeen
Downie, Wm., Kinbroom, Rothienorman
Duff, Col. James, Knockleith, Turriff
Duguid, P., of Cammachmore, Aberdeen
Dunbar, William, Union Bank, Turriff
Duncan, C., Deebank, Murtle, Aberdeen
Duncan, John, Ardo, Methlick
Duncan, John, Fortrie, King Edward
Duncan, Patrick, Balchers, King Edward
Durno, James, Jackston, Rothienorman
Durno, John, Lambhill, Insch
Durno, John, Sunnyside, Rothienorman
Durward, John, Luib, Corgarff, Strathdon
Duthie, William, Banker, Tarves
Edmond, Alex., Garthdee, Aberdeen
ELPHINSTONE, Sir James D. H., of Horn and Logie Elphinstone, Bart., Pitcaple
Ewen, Robert, West Town, Tarland
Farquhar, Arthur, W.S., Aberdeen
Farquhar, Captain, of Glenesk, Turriff
Farquhar, James, Old Echt, Echt
Farquharson, Colonel James Ross, of Invercauld, Braemar
Farquharson, J., 4 Bridge Street, Aberdeen

Farquharson, James, East Town, Tarland
Farquharson, R. O., of Haughton, Alford
Ferguson, Lieut.-Col. George A., of Pitfour
Ferguson, Thomas, Union Street, Aberdeen
Ferguson, Wm., of Kinmundy, Aberdeen
Field, Sydney, Scotstoun House, Aberdeen
Foggo, R. G., Invercauld Office, Ballater
FORBES, Lord, Castle Forbes
Forbes, J. O., of Corse, Lumphanan
Forbes, James, Tombreck, Glenbucket
Forbes, Maj.-Gen. J., of Inverernan, C.B., Strathdon
Forbes, John, Pitellachie, Coldstone
FORBES, Sir W., of Craigievar, Bart., Aberdeen
Fowler, William, of Asleed, Turriff
Fraser, Fran. G., of Findrack, Torphins
Fraser, Colonel Fred. Mackenzie, of Castle Fraser, Aberdeen
Garden, James M., Advocate, Aberdeen
Garden, Robert, North Ythsie, Tarves
Garioch, Peter, 1 Stirling Street, Aberdeen
Garvie, R. G., Aberdeen
Gibson, H. J., Fornety, Foveran
Gordon, A. Hay, of Mayen and Avochie, Huntly
Gordon, A. M., of Newton, Insch
Gordon, A. N. Forbes, of Rayne, Pitcaple
Gordon, C. P., of Wardhouse, Insch
Gordon, Henry, of Manar, Inverurie
Gordon, H. W., of Hallhead, Ellon
Gordon, John, of Craigmyle, Torphins
Gordon, William, Auchallater, Braemar
Gossip, William, Park, New Machar
GRANT, Sir Archd., of Monymusk, Bart.
Grant, John, Banker, Methlick
Grant, Robert, of Druminnor, Rhynie
Grassick, John, Aberdeen
Halkett, Jas., Auchentender, Insch
Hall, James, 33 Frederick Street, Aberdeen
Hamilton, George, of Skene, Aberdeen
Harvey, George Thomson, Lime Co., Aberdeen
Harvey, J. H., Pitgersie, Foveran, Ellon
Hay, Col. A. S. L., of Rannes, C.B., Kennethmont
Hay, James, jun., Little Ythsie, Tarves
Hector, A. E., 167 Crown Street, Aberdeen
Henderson, John, Courtestown of Leslie, Insch
Hepburn, James, Spittal, Keithhall
Hunter, Capt. A. C., of Tillery and Auchiries, Aberdeen
HUNTLY, The Marquis of
Innes, Col. Thomas, of Learney, Torphins
Innes, T. G. Rose, of Netherdale, Turriff
Ironside, John, Brindy, Keig, Whitehouse
Ironside, William, Clofrickford, Ellon
Irvine, Alex. Forbes, of Drum, Aberdeen
Jamieson, G., 34 Nether Kirkgate, Aberdeen
Jeffrey, Arthur, Banks, Fyvie
Johnston, Geo., Aquhorthies, Inverurie
Johnston, Robt., 16 Queen's Road, Aberdeen
Johnstone, J., Drumwhindle Mains, Ellon
Keith, Alexander, Chapelton, Ellon
Keith, Jas., Newton of Kinmundy, Mintlaw
Kilgour, Robert, junior, Ardlin, Ellon
King, Lieut.-Col. Wm. R., of Tertowie, Kinaldie
KINTORE, The Earl of
Law, John, New Keig, Whitehouse
Lawrence, W. J., Gowanhill, Cortes, Lonmay
Lawson, Charles, Deebank, Cults
Lawson, C., Ordhead, Cluny, Aberdeen
Lawson, James, Westerton, Huntly
Leask, William, Skilmafilly, Ellon
Ledingham, A., Drumblair, Forgue, Huntly
Leith, Alex., of Freefield, Inverkindie
Leith, Major Thomas, Westhall, Oyne
Ligertwood, John, Sheriff-Clerk, Aberdeen
Littlejohn, William, Whitemryes, Aberdeen
Lovie, Alex., Nether Boyndlie, Fraserburgh
Lumsden, G., Leslie Lodge, Inverurie
LUMSDEN, Gen. Sir H. B., Belhelvie Lodge, Aberdeen
Lumsden, Henry, of Pitcaple, Pitcaple
Lumsden, H. G., of Auchindoir, Aberdeen
Lumsden, W. H., of Balmedie, Belhelvie
M'Combie, J. Boyn, Advocate, Aberdeen
M'Combie, P., Upper Farmton, Whitehouse
M'Combie, William, of Easter Skene, Skene
M'Connach, Chas., Cairnballoch, Alford
Macdonald, R., Cluny Castle, Aberdeen
Mackenzie, J. T., of Glenmuick, Ballater
Mackie, James, Lewes, Fyvie
Mackie, William, Petty, Fyvie
Mackinnon, L., jun., Advocate, Aberdeen
M'Robbie, Peter, Sunnyside, Aberdeen
M'William, Mrs, Bucharn, Huntly
Maitland, James, jun., Little Methlick, Methlick
Maitland, Robert, Balhalgardy, Inverurie
Maitland, Wm., Alton of Coynach, Mintlaw
Maitland, Wm., Muirtown, Old Meldrum
Marr, John, Cairnbrogie, Old Meldrum
Marr, Wm. Smith, Upper Mill, Tarves
Martin, James, Springbank Terrace, Aberdeen
Mearns, Rev. Duncan G., Oyne Manse
Merson, James, Craigwillie, Huntly
Middleton, Alex., Belmont, Aberdeen
Miller, Wm., Pond Cottage, Whitehouse
Milne, A., Corse of Kinnoir, Huntly
Milne, Alex., Mill of Allathan, Udny
Milne, J., Netherton of Pittendrum, Fraserburgh
Milne, James, Banker, Huntly
Milne, John, Mains of Laithers, Turriff
Mitchell, Alex., Balgreen, King Edward
Mitchell, A., Implement Maker, Peterhead
Mitchell, John, Lairshill, Summerhill, Aberdeen
Mitchell, William, Mains of Biffie, Old Deer
Mitchell, Wm. A., Auchnagathel, Keig
Moffat, Wm, N. of S. Railway, Aberdeen
Moir, James, Mains of Wardhouse, Insch
Morris, W., V.S., 7 Langstane Place, Aberdeen
Morrison, Harry L. L., of Blair, Aberdeen
Morrison, John, jun, Hattonslap, Methlick
Murdoch, William, Solicitor, Huntly
Murray, James, Fauchfaulds, King Edward
Nares, A. F., Brucktor, Old Meldrum
Nicol, W. E., of Ballogie, Aboyne
Norrie, Wm., Cairnhill, Montquhitter
Ogston, Alex. M., of Ardoe, Aberdeen
Paul, William, Advocate, Aberdeen
Paull, James, Advocate, Aberdeen
Philip, George, Boynds, Keith Hall
Philip, W., Lofthillock, Keith Hall
Pittendrigh, A., Mains of Park, Lonmay
Porter, G., jun., 5 Marischal Street, Aberdeen
Porter, James, Inverurie
Profeit, Dr, Craigowan Cottage, Balmoral
Rae, John, jun, Corn Merchant, Ellon
Rae, Wm., Advocate, Aberdeen
Ramsay, Col. John, of Barra, Straloch
Reid, George, Baads of Drum, Peterculter
Reid, George, jun., Clinterty, Blackburn
Reid, Dr James, Templeton, Mossat
Reid, James, Waterside Cottage, Alford
Reid, James, Horse Bazaar, Peterhead
Reid, James, Ittingston, Huntly
Reid, Peter, Crofts of Glenmuick, Ballater
Reith, James, South Auchinclech, Skene
Reith, Robert, Middlefield, Woodside
Robertson, Alex., Tocherford, Warthill
Ross, Alexander, Oldtown, Tarland
Ross, H., jun., Union Bank of Scotland, Tarland
Ross, John Leith, of Arnage, Ellon
Ross, Peter, Arngrove, Torphins
Ross, Wm., Annesley, Torphins
Roy, Alex., Waterton, Insch, Aberdeen

Ruxton, Andrew, South Artrochie, Ellon
SALTOUN, Lord
Scott, Alex., Towie Barclay, Aberdeen
Scott, Walter, Glendronach, Huntly
Scott, William, Wester Rora, Mintlaw
Scott, W., Urquhart Road, Old Meldrum
Sellar, R., Implement Maker, Huntly
Shaw, Hary, Bogfern, Tarland
Shaw, James, Tillyching, Lumphanan
Shepherd, George, Shethin, Tarves
Simpson, Robert, of Cobairdy, Huntly
Skeen, John, Commercial Inn, Tarland
Skinner, James, Woodside, Aberdeen
Sleigh, John, Strichen Mains, Strichen
Smith, Alex., C.E., 94 Skene Street, Aberdeen
Smith, James, Auchlin, Fisherie, Turriff
Smith, John, Advocate, Aberdeen
Smith, John, Drumduan, Dess, Aberdeen
Smith, W., Middleton, Balquharn, Inverurie
Smith, William, Corskelly, Lonmay
Stephen, James, Conglass, Inverurie
Stewart, Samuel, Sandhole, Fraserburgh
Strachan, Andrew, Saphock, Old Meldrum
Strachan, Charles, Tillyorn, Tarland
Strachan, George, Inverebrie Mains, Ellon
Strachan, Alex., Wester Fowlis, Alford
Strachan, Lewis, Cluny of Raemoir, Banchory
Stuart, Alexander, of Laithers, Turriff
Tait, John, Crichie, Inverurie
Taylor, James, Toux, Mintlaw
Thompson, George, of Pitmedden, Dyce
Thomson, Jas., Aberdeen
Thomson, John Comrie, Sheriff-Substitute, Aberdeen
Thomson, Wm., Banker, Tarland
Todd, Gavin J., Thainstone, Kintore
Tough, James, Mains of Drum, Drumoak
Turnbull, Peter M., Smithston, Rhynie
Turner, John, of Turner Hall, Ellon
Udny, J. H. F., of Udny and Dudwick, Aberdeen
Urquhart, B. C., of Meldrum, Old Meldrum
Urquhart, Captain F. P., of Craigston
Vallentine, J., Nether Afflock, Dunecht
Walker, James, West Side of Brux, Kildrummy
Walker, Wm., Ardhunckart, Mossat
Warrack, W., Newmill of Fintray, Aberdeen
Watson, George, Edendiack, Gartly
Watson, J. P., of Blackford, Rothienorman
Watt, Gordon, Mains of Park, Drumoak
White, J. F., Grain Merchant, Aberdeen
Whyte, John, Advocate, Aberdeen
Wilken, George, Waterside of Forbes, Alford
Williamson, A. F., Pitcaple
Wilson, Alex., Kirkhill, Old Meldrum
Wilson, George, Whiteside, Alford
Wilson, J., Mains of Scotstown, Aberdeen
Wilson, John, Castle Park, Huntly
Wilsone, Thomas, Solicitor, Aberdeen
Wishart, W., Cairntradlyn, Blackburn
Wood, James, Crown Street, Aberdeen
Yeats, Alex., Advocate, Aberdeen
Yeats, William, of Aquharney, Aberdeen
Yull, John S., Little Ardo, Methlick

ARGYLL.

Aitken, Robert, Drumore, Campbeltown
Allan, Alex., of Aros, Tobermory
Allan Robt., Glenmore, Lochgilphead
Allan, T. W. M., of Glenfeochan, Oban
Anderson, John, Strachurmore, Inveraray
Anderson, W., Ballimore, Tigh-na-bruiach
ARGYLL, The Duke of, K.T.
Ballingal, J. S. R., Ellabus, Islay
Black, Don., junior, Clachan, Lochfynehead
Brown, Alexander, Banker,'Oban
Bruce, Henry, of Ederline. Lochgilphead
Buchanan Dr Alexander, Tiree, Tobermory
Buchanan, Angus, Fannans, Taynuilt
Buchanan, Dun., Auchenbreck, Colintraive
Cameron, Donald, Inversanda, Fort-William
Cameron, Donald, of Lochiel, M.P.
Cameron, John, Glackeriska, Appin
Cameron, John, Keil, Fort-William
Campbell, Alex., of Auchendarroch, Lochgilphead
Campbell, Rev. A., Assapool, Bunessen, Mull
Campbell, Farquhar, of Ormsary, Ardrishaig
Campbell, Lt.-Col., of South Hall, Colintrave
Campbell, C. Macpherson, of Ballimore
Campbell, C. G., of Stonefield, Tarbert
Campbell, Rear-Admiral, of Barbreck, Lochgilphead
Campbell, Capt. D., of Inverneil and Ross, Ardrishaig
Campbell, Major D. P., of Balliveolan
Campbell, D. T., Duiletter, Dalmally
Campbell, Hector A., Ardfenaig, Bunessan
Campbell, Jas., Ormaig, Lochgilphead
Campbell, James, of Jura
Campbell, John, of Killberry, Tarbert
Campbell, John, Glenforsa, Aros, Mull
Campbell, J. G., of Shirvan, Lochgilphead
Campbell, Robert Hume, of Glendaruel
Carmichael, Peter, Bowmore, Islay
Carmichael, Peter, junior, Macharie, Port Ellen
Cheape, Lieut.-Col. C., of Kilundine, Morven
Clark, Andrew, Islay
Clark, Archh., Bencorrum, Dunoon
Clark, Archibald, Inverchapple, Kilmun
Clark, Francis William, of Ulva, Aros
Clark, Lachlan, Tangy, Campbeltown
Colthart, Robert, Achateny, Strontian
Cordiner, Alex., Machriemore, Southend
Craig, Hugh, Ardoran, Oban
Craig, John, Glencruitten, Oban
Craig, Robert, Campbeltown
Crawford, R., of Lochsannish, Campbeltown
Dalgleish, John J., of Ardnamurchan
Dickie, Robt., Killeonan, Campbeltown
DOUGLAS, Gen. Sir John, K C. B., of Glenfinnart
Douglas, J., Argyll Arms Hotel, Campbeltown
Duncan, Alex., Duart, Auchnacraig, Mull
Duncan, James, of Benmore, Kilmun
Duncan, R., Royal Hotel, Tigh-na-bruaich
Finlay, A. S., of Castle Toward, Greenock
Finlay, Kirkman, of Dunlossit, Islay
Fletcher, B. J. C., Dunans, Colintraive
Forsyth, Jas. N M., of Quinish, Tobermory
Gardyne, Col. C. G., of Glenforsa, Mull
Gillespie, John, Minard, Inveraray
Gilmour, Hugh, Ballimore, Tigh-na-bruiach
Grant, A., Ardkinglas, Cairndow
Grieve, John, Castles, Dalmally
Hall, Allan, Ardmaddy, Easdale, Oban
Hall, James M., Killean House, Tayinloan
Hamilton, James, Bank Agent, Campbeltown
Hay, C., Ardbeg, Islay
Holm, Alex., Ballimore, Kilmichael, Lochgilphead
Hosack, William, Kilmaronag House, Oban
Hunter, William, Machribeg, Campbeltown
Johnston, Don., Kilbride, Easdale, Oban
Johnston, W., Ranachan, Campbeltown
Kay, Robt., Tuns, Minard, Inveraray
Lamont, James, of Knockdow, Greenock
Lang, Hugh, Glengorm, Tobermory
Lang, Robert, Aros Mains, Aros
Lang, William, Glengorm, Tobermory
Lloyd, T., of Minard Castle, Inveraray
Lorimer, J., Achrossan, Tigh-na-bruiach
LORNE, The Marquis of, K.T.
Lothian, James, Campbeltown
Macalister, Keith, of Glenbarr, Greenock
Macallum, Donald, Balligowan, Oban
Macarthur, John, Banker, Iuveraray

McCallum, Dun., Clenmachrie, Oban
M‘Coll, Duncan, Clachan, Lismore, Oban
M‘Diarmid, D. A., Killiemore, Auchnacraig
Macdiarmid, H., Tiree, Tobermory
Macdonald, Alex., Nether Largie, Kilmartin
Macdonald, Angus, Bellfield, Campbeltown
Macdonald, Archd. Burns, of Glencoe
Macdonald-Robertson, W. D. A., of Kinlochmoidart, Ardgour
M‘Dougall, Col. Chas. A., of Dunollie, Oban
M‘Dougall, Wm., Auchandarroch, Ballachulish
Macfarlane, Alex., Mealldarroch, Tarbert
Macfarlane, A., Pollanilline, Campbeltown
Macfarlane, Lewis, Lettermay, Lochgoilhead
M‘Gibbon, David, Ardnacraig, Campbeltown
MacGregor, Donald, Solicitor, Oban
MacIntyre, J., Lochvoil Cottage, Oban
Mackay, A. F., Carskey House, Campbeltown
M Keand, P., Scour, Bunessan Mull
M‘Kechnie, Neil, Dunoon
Mackechnie, James, Dalmore House, Oban
Mackechnie, James, jun., Dalmore House, Oban
M‘Kellar, John, Kilinan, Bowmore, Islay
Mackellar, Peter, Crossaig, Tarbert
Mackenzie, Donald, Glengloy, Fort-William
Mackenzie, John, of Knipoch, Oban
M‘Kerral, A., Brunerican, Campbeltown
Mackinnon, Wm., of Loup, Clachan, Kintyre
M‘Lachlan, D., Lochgilphead
Maclaine, Hugh, Glenrisdell, Tarbert
MacLaine, M. G., of Lochbuy, Oban
M‘Latchie, W., Ballygreggan, Campbeltown
M‘Lean, A. J., of Pennycross, Oban
M‘Lean, A. T., of Ardgour, Fort-William
Maclean, Colin, of Lagan, Islay
Maclean, Dr L., Columba Cottage, Oban
M‘Moran, R., Kinlochspelvie, Lochbuy
M‘Nair, James, Smerby, Campbeltown
Macneal, H., of Ugadale, Campbeltown
M‘NEILL, Col. Sir J. C., of Colonsay, V.C., K.C.M.G., C.B.
M‘Nicol, John, Garvie, Glendaruel
M‘Nicol, John, Salachael, Fasnacloich, Appin
M‘Phail, J., Scallasdale, Mull
Macpherson, James, Maam, Inveraray
Malcolm, Wm., Carsaig, Mull
Malcolm, Wm. M., Carsaig, Pennyghael
Masson, John, Tobermory
Maxwell, Wm., Baraskomel, Campbeltown
Mercer, John, Ardnadam, Dunoon
Mitchell, J., Homeston, Campbeltown
Mitchell, J., Ballemenach, Campbeltown
Mitchell, S., Dalivaddy, Campbeltown
Morrison, Charles, of Islay, Bridgend
Moubray, J. M., Strone House, Strone, Greenock
Munro, D. H. C., of Kinlochlaich
Nicol, James, Solicitor and Banker, Oban
Oliver, James, Benbuy, Inveraray
Oliver, W. Elliot, Benbuy, Inveraray
ORDE, Sir John W. P. C., of Kilmory, Bart.
Patterson, John, Ballimore, Strachur
Pitcairn, Henry H., of Tiroran, Mull
Pollok, John, of Ronachan, Clachan
Ramsay, John, of Kildalton, M P., Port Ellen
RIDDELL, Sir T. M., of Sunart, Bart.
Robertson, Duncan, of Pennyghael
Robertson, Jas. J., Kinloch, Morvern
Robertson, J., Glencripisdale, Strontian
Robertson, R. W., of Glenshillish
Scott, John, White Cottage, Dalmally
Semple, Thomas, Carradale, Campbeltown
Shaw, James T., Mungastell, Morvern
Sim, John Fraser, Oban
Sinclair, John, Auchintee, Fort-William
Sinclair, Peter, Kilmartin
Smith, W. Anderson, Ledaig
Sommerville, John, Belloch, Campbeltown
Sproat, George B., Writer, Tobermory
Sproat, William, Procurator-Fiscal, Tobermory
Stalker, Donald, Benmore, Kilmun
Stewart, Rev. A. M., Inverchaolain, Greenock
Stewart, Com. D., R.N., Stronvar, Campbeltown
Stewart, John Lorne, of Coll
Stewart, Captain J. C., of Fasnacloich, Appin
Stewart, William, Tonreoch, Campbeltown
Stodart, J. A., Blairmore, Greenock
Swinburne, Capt., R.N., of Eilan Shona, Strontian
Templeton, Robert, Rannachan, Campbeltown
Thomson, James H., Knocknahan, Campbeltown
Thorburn, David, Calgary, Tobermory
Turner, A., jun., Drumdrishaig, Ardrishaig
Turner, D., Corachaive, Sandbank
Weir, Alex., Gallowhill, Campbeltown
Whyte, Angus, Easdale, Oban
Whyte, D. C., Ballimore, Sandbank
Whyte, John, Ballochyle, Sandbank
Willison, Geo., Ardlarach House, Luing, Oban
Wilson, J., jun., Saddel Street, Campbeltown
Wilson, James Hodge, S.S.C., Oban
Wilson, Peter, Linsaig, Tigh-na-bruaich
Wyllie, James, Factor, Inveraray

AYR.

AILSA, The Marquis of
Allan, Andrew, Munnoch, Dalry, Ayr
Alston, George, Loudoun Hill, Darvel
Anderson, T., of Glendrisaig, Lainshaw House, Stewarton
Anderson, W., Barneil, Kirkmichael, Maybole
Baxter, David, Ladyburn, Maybole
BLAIR, Sir E. H., of Blairquhan, Bart., Maybole
Blair, Captain W. F., of Blair, R.N., Dalry
Bone, William, Shalloch Park, Girvan
Boyd, Col. J. Hay, of Townend, Symington
Boyle, Capt., of Shewalton, R.N., Dreghorn
Brown, David, Banker, Maybole
Brown, James, Whinpark, Kilmarnock
Brown, John, Lissensmoss, Kilwinning
Bruges, Edward C., Dalgig, New Cumnock
Burnett, Maj.-Gen. F. C., of Gadgirth, Tarbolton
Caldwell, Wm., Boydstone, Ardrossan
Campbell, Arthur, of Catrine
Campbell, Colonel Chas. V. H., of Nether Place, Mauchline
Campbell, J. S. D., of Corraith, Ayrshire
Campbell, R. F. F., of Craigie, M.P.
Clark, William, Shawhill, Monkton
Clelland, James, Knockenlaw, Kilmarnock
COATS, Sir Peter, of Auchendrane, Ayr
Cochrane, James, Eglinton Hotel, Dalmellington
Cooper, Wm. S., of Failford
Craig, M., Ryesholm, Dalry
Craig, Jas., Holms of Caaf, Dalry
Craig, J., of Craigdarroch, Monktonhill, Monkton
Craig, John, Guelt, Cumnock
Craig Robert, Flashwood, Dalry
Craig, Wm., Monktonhill, Monkton
Crawford, J., Milnstonford, West Kilbride
Cross, David, of Knockdon, Maybole
Cuninghame, D., Chapelton, Ardrossan
CUNINGHAME, Sir W. M., of Corsehill, Bart.
Cunningham, John, Trees, Maybole
Cunningham, W.A., of Logan, Cumnock
Cunningham, W. C. S., of Caprington, Kilmarnock
Deans, J. Y., of Kirkstyle, Kilmarnock
Drennan, James, Auchenlee, Ayr

Drummond, Robert, Pocknave, Craigie, Kilmarnock
Duncan, Robert, Brockwellmuir, Dunlop
Dunlop, Gabriel, Castle Farm, Stewarton
Dunlop, Quintin, Morriston, Maybole
Dunlop, Robert, Aulton, Kilmaurs
Dunlop, W. H., of Annanhill, Kilmarnock
EGLINTON and WINTON, The Earl of
FERGUSSON, Right Hon. Sir James, of Kilkerran, Bart.,
Finnie, Wm., of Newfield, Kilmarnock
Foulds, A. R., of Clerkland, Stewarton
Gemmell, Andrew, Lugton Ridge, Beith
Gemmell, G. C., Upper Whitehaugh, Muirkirk
Gilmour, Alex., Annfield House, Irvine
Gilmour, James, Orchardton, Cumnock
Glasgow, R. B. R., of Montgreenan, Kilwinning
Gordon, John T., Fairfield, Ayr
Graham, T. D. C., of Dunlop, Stewarton
Guthrie, Robert, Crossburn, Troon
Hamilton, Hugh, of Pinmore, Girvan
Hamilton, J., Wallace Bank, Kilmarnock
Hamilton, Lieut.-Col. John, of Sundrum, Ayr
Hamilton, W. S., Springside, Kilmarnock
Haughton, W. H., Craigowan, Kilmarnock
Hayman, J., Dumfries House Mains, Cumnock
Hazel, Alex., of Blackcraig, Maybole
Hodge, John, Lochill, Mauchline
Holmes, Wm., Fullarton Street, Irvine
Houldsworth, Henry, Carrick House, Ayr
Houldsworth, J. M., Ayr
Howatson, W. M. S., Carskeoch, Patna, Ayrshire
Howie, John, Hurlford, Kilmarnock
Hunter, David, Guiltreehill, Maybole
Hunter, Thomas, Maybole
Hyndman, Henry C., of Springside
Inglis, Robert, Lovestone House, Girvan
Kerr, James, Lochend, Kilbirnie
Kerr, Robert, of Chapledonan
Kerr, William, Newhouse, Dalry
Kilpatrick, Jas., Craigie Mains, Craigie
Latta, William, Darmalloch, Cumnock
Lindsay, John, Thornhill, Stewarton
Lindsay, Thomas, Townend, Craigie
M'Connell, William, of Knockdolian, Girvan
M'Connell, P., 14 Carrick Park, Ayr
M'Illwrick, Alex., Union Bank, Barrhill
M'Kerrell, R. M., of Hillhouse, Dundonald
M'Kersie, J., Cunningham House, Muirkirk
Mackie, Robert, Draffen House, Stewarton
MacMillan, J. G., Dereel House, Ayr
Macnaughton, J., of Smithfield, Ayr
Marshall, Francis, of Park, Girvan
Marshall, John, Maybole
Meikle, James, Nether Mains, Kilwinning
Millar, Robert, Alloway Cottage, Ayr
Mitchell, Alex., of Sauchrie, Maybole
Montgomerie, Robert, Lessnessock, Ochiltree
Muir, J. G., Cunninghamhead, Kilmarnock
Murray, J., Dumfries Arms Hotel, Cumnock
Nisbet, John, Longgreen, Newmilns
Oswald, Richard A., of Auchincruive, Ayr
Picken, James, Laigh Langside, Craigie
Picken, John, Mansfield Mains, New Cumnock
Pollock, A., Mauchline
Ralston, A. R., Genoch, Straiton
Rankine, Alex. M., yr. of Beoch, Maybole
Rankine, John, of Beoch, Maybole
Rodger, Hugh, Hillhead, Kilmarnock
Scott, C. W., Hawkhill, Largs
Shaw, Chas. G., Ayr
Sloan, John, Barnhill, Patna
Sloan, Wm., Brieryside, Monkton
Smith, Alex., Barnford, Dalrymple, Ayr
Smith, Thomas, The Castle, Maybole
Somervell, James, of Sorn, Mauchline
Speir, Robert, Blairpark, Largs
STAIR, The Earl of, K.T.,
Stevenson, John, Changue, Cumnock
Stewart, James, Heathfield, Irvine
Stuart, A., Muirhouse, Symington, Kilmarnock
Taylor, H., Kamishill, Hurlford, Kilmarnock
Thorneycroft, J. B., Kilmarnock
VERNON, Hon. G. R., Auchans House, Kilmarnock
Wallace, H. R. C., of Busbie and Cloncaird
Wallace, Robert, Auchenbrain, Mauchline
Wardrope, Robert, Garlaff, Cumnock
Weir, W., Portland Iron Works, Kilmarnock
Willison, Alex., Townend, Dalry
Willison, Jas. P., of Cultezeun, Maxwelton
Wilson, James, Banker, Kilmarnock
Wilson, J. P., of Polquhairn, Cumnock
Wright, Bryce, Dowhill, Girvan
Wright, R. P., Downan, Ballantrae
Young, John, jun., Ayr
Young, Wm., Shields, Monkton, Ayr

BANFF.

ABERCROMBY, Sir R. J. of Birkenbog, Bart.
Barclay, Wm., Gordon Arms Hotel, Keith.
Beedie, William, Pitgair, Fisherie, Turriff
Brown, James Geddes, Distiller, Keith
Bryson, W. G., Cullen House, Cullen
Coutts, William, Banff
Cumming, George, Writer, Banff
Cumming, H. G., Pittyvaich, Dufftown
Dawson, William, Westerton, Fochabers
Dean, George, Brangan, Portsoy
DUFF, Hon. Geo. S., Montcoffer House, Banff
Duff, L. Duff Gordon, of Drummuir, Keith
Duff, Thomas, of Aberlour
Duff, Thomas Gordon, Park House, Banff
Duncan, R., Auchenbaidie Mains, Banff
Findlater, James Smith, Balvenie, Dufftown
Gordon, P. G., Nevie, Glenlivet, Ballindalloch
Gordon, John P., of Cairnfield, Fochabers
Grant, G. S., Auchorachan, Glenlivet, Ballindalloch
Grant, J., Mains of Advie, Craigellachie
Green, Robert, Ruthrie, Aberlour
Green, William, Lynnburn, Aberlour
Hannay, John, Gavenwood, Banff
Hay, Alex., Byres, Fochabers
Inkson, Thos. F., Kinermony, Craigellachie
INNES, Sir J., of Balveny and Edengight, Bart., Keith
Kemp, Chas., Methercluny, Dufftown
Kynoch, Geo., jun., Isla Bank Mills, Keith
Leslie, A. F., Braco, Keith
Leslie, G. A.-Young, of Kininvie
Macpherson, J., Achlochrach, Glenrinnes
Michie, C. Y., Forester, Cullen House
Miller, John, Seafield, Cullen
Murray, G. W., Banff Foundry, Banff
Murray, Wm., Mains of Pittendreigh, Turriff
Ogilvie, A. M., Tillynaught, Portsoy
Paterson, Wm., Auldtown of Carnousie, Turriff
Petrie, James, Banker, Dufftown
Ramsay, Alex., *Banffshire Journal* Office, Banff
RICHMOND and GORDON, The Duke of, K.G.
Robertson, Wm., Aberlour Mains, Craigellachie
Robertson, Wm., Cuttlebrae, Fochabers
Rust, James, Paddocklaw, Banff
SEAFIELD, The Earl of
Shand, Geo., Ordens, Boyndie, Banff
Simpson, G., South Burreldales, Alvah, Banff
Simpson, J. (Auchinachie & Simpson), Keith
Skinner, Wm. M., Drumin, Ballindalloch
Smith, J., Mullochard, Ballindalloch
Smith, John, Cragganmore, Ballindalloch
Steuart, And., of Auchlunkart, Keith
Strachan, J., Mains of Montcoffer, Banff

Stuart, C., Tomindugle, Knockando, Craigellachie
Tayler, W. J., of Glenbarry, Rothiemay House, Huntly
Turner, R., Auchnarrow, Ballindalloch
Walker, Francis, Craignetherty, Turriff
Watson, George Edendiack, Gartly
Williamson, Robert, Netherwood, Banff

BERWICK.

Allan, John, Billie Mains, Ayton
Allan, John, Redheugh, Cockburnspath
Allan, Robert A., Eyemouth
Askew, W., of Pallinsburn, Coldstream
Bertram, John, Hartside, Lauder
Bertram, John S., Cranshaws, Duns
Binnie, John, Birnieknows, Cockburnspath
Bird, James B., Fishwick, Paxton
Black, George, Sea-View Works, Berwick
Bolam, Robert George, Berwick-on-Tweed
Borthwick, Gilbert, Barelees, Coldstream
BOSWALL, Sir G. Houstoun, of Blackadder, Bart.,
Bowhill, James, Banker, Ayton
Boyd, John, Simprin Mains, Coldstream
Brigham, J., Implement Works, Berwick
Broadwood, Thomas, of Fulfordlees, Crowhill, Dunbar
Broomfield, Thomas, Lauder
Bromfield, W. J., Old Greenlaw, Greenlaw
Broughton, R. H., of Rowchester, Greenlaw
Brownlie, Alex., Haughhead, Earlston
Brydon, Thos. T., Burncastle, Lauder
Burn, Forbes, Hardacres, Coldstream
Calder, R., Little Swinton, Coldstream
Calder, W. A., Oxenrig, Coldstream
CAMPBELL, Sir H. Hume, of Marchmont, Bart.,
Carmichael, John, Coldstream
Carr, Robert, Felkington, Norham, Berwick
Carter, James, Corn Exchange, Berwick
CATHCART, Lieut.-Col. the Hon. A. F., Caldra, Duns
Caverhill, John, Greenburn, Reston
Chirnside, G., Edrington House, Berwick
Clark, T., Oldhamstocks Mains, Cockburnspath
Cowe, Peter, Lochton, Coldstream
Cowe, Robert, Old Castles, Chirnside
Cowe, Wm., Butterdean, Grant's House
Craw, H. H., Foulden West Mains, Chirnside
Craw, James, Whitsome Hill, Chirnside
Crawford, Alex., Writer, Duns
Crossman, M. G., Bridgend, Berwick
Darling, Adam, Governor's House, Berwick
Darling, Thomas, Governor's House, Berwick
Dickenson, Robert, Longcroft, Lauder
Dickenson, Wm., Longcroft, Lauder
Dodds, William, Elwarthlaw, Greenlaw
Elder, Thos., Wedderburn Mains, Edrom
Elder, W., Implement Works, Berwick-on-Tweed
Elliot, John, Primrosehill, Duns
Fender, Robert, Northfield, Coldingham
Ferguson, J., Duns Castle Estate Office, Duns
Flint, Alex., Nether Mains, Chirnside
Fulton, W., Hatchetnize, Coldstream
Gibb, Robert Shirra, Boon, Lauder
Gibson, J., Gunsgreen Hill, Ayton
Gilroy, James, Berwick-on-Tweed
Grieve, Walter, Cattleshiel, Duns
HADDINGTON, The Earl of
Haldane, Robert, Barlees, Cornhill-on-Tweed
HAMILTON, Hon. R. B., Langton, Duns
Henderson, Robert, East Gordon, Gordon
Herbertson, Robert H., Fans, Earlston
Hogg, Thomas, Hope Park, Coldstream
HOME, The Earl of
Home, David Milne, of Milnegraden
Home, Col. D. Milne, of Wedderburn, M.P.
Hood, James, Cove, Cockburnspath
Hood, John, Townhead, Cockburnspath
Hood, T., Coldstream Mains, Coldstream
Hood, W., The Cove, Cockburnspath
Hunter, James, of Antonshill, Coldstream
Innes, Alexander Mitchell, of Ayton
Jack, Samuel, Mersington, Coldstream
Johnson, W. H., Ramrig, Ladykirk
Johnston, James, Huntingdon, Lauder
Kerr, John, Land Surveyor, Duns
Kynoch, Patrick, M.D., Greenlaw
Laing, George, Wark, Coldstream
LAUDERDALE, The Earl of
Lawrie, Alex., Hardens, Duns
Lithgow, E., Bedshiel, Greenlaw, Duns
Lockie, William, West Morriston, Earlston
Logan, J. W., The Avenue, Berwick
Loney, Peter, Marchmont, Duns
Low, James, Laws, Whitsome
Lyal, William, Fogorig, Duns
Macbraire, J., of Broadmeadows, Berwick
M'Dougal, George, Blythe, Lauder
Mack, Joseph, Berrybank, Reston
MARJORIBANKS, Sir John, of Lees, Bart.
Melrose, Jonathan, Coldstream
Menzies, John, Bankhead, Duns
Mill, Allan, Dods, Lauder
MILLER, Sir Wm., of Manderston, Bart.
Muirhead, Geo., Paxton, Berwick
Nisbet, George, Rumbleton, Greenlaw
Nisbet, Jas., of Lambden, Greenlaw
Paterson, James, Kidshielhaugh, Duns
Penny, Thos., Bartlehill, Coldstream
Porteous, James, Solicitor, Coldstream
Purves, Captain Home, of Purves Hall
Rae, Robt., Burnbank, Foulden, Berwick
REAY, Lord
Romanes, Robert, of Harryburn, Lauder
Rutherford, A., Rumbleton Law, Gordon
Rutherford, G., Printonan, Coldstream
Scott, Peter, Chirnside Crofts, Chirnside
Selby, B. P., Paston, Coldstream
Shaw, James, Skaithmuir, Coldstream
Shiel, Andrew, Coldstream
Simson, George, Courthill, Kelso
Smith, Alex., Letham, Berwick
Smith, F. C., Hoprig, Cockburnspath
Smith, J. F., Fireburn Mill, Coldstream
Smith, Peter, Crooks, Coldstream
Smith, R. Colley, Skaithmuir, Coldstream
Somervail, J. A., Hawkslaw, Coldstream
Stephenson, Richard, Chapel, Duns
Swinton, A. Campbell, of Kimmerghame
Swinton, Alan, Swinton House, Coldstream
Swinton, J. L. Camphell, yr. of Kimmerghame
Tait, G., Milnegraden Mains, Coldstream
Thompson, Andrew, Berwick-on-Tweed
Thomson, James, Mungoswalls, Duns
Thomson, John, The Avenue, Berwick
Torrance, George, Sisterpath, Duns
Torrance, T., Laws, Chirnside
Turnbull John, of Abbey St Bathans
Wallbank, Jonas, Berwick-on-Tweed
Weatherhead, Wm., Bogangreen, Coldingham
Webster, J., New Horndean, Berwick
Weddell, John Wilkie, Lauder Barns, Lauder
White, A., Kelloe Mains, Edrom
White, E. C., Ayton Law, Ayton
White, Wm., Lennel Hill, Coldstream
Wight, Thomas, Pilmuir, Lauder
Wilkie, John, of Foulden, Berwick
Wilson, George, Druggist, Coldstream
Wilson, John, Wellnage, Duns
Wilson, J., Chapelhill, Cockburnspath
Wilson, Philip, Corn Factor, Duns
Wood, J., Whiteside, Greenlaw, Duns
Young, Matthew, Berwick

BUTE.

Allan, James, Clauchlands, Lamlash
Allan, James, jun., Balnacoole, Brodick
Barr, William, Kerrylamont, Rothesay
BUTE, The Marquis of, K.T.
Comrie, Alex., Albany Terrace, Rothesay
Dalrymple, Charles, of Newhailes, M.P.
Duncan, C., of Meadowcap, Rothesay
Duncan, Hugh, Langalchorad, Rothesay
Duncan, James, Bannatyne Mains, Rothesay
GLASGOW, The Earl of
HAMILTON and BRANDON, The Duke of, K.T.
M'Alister, Robert, Mid Ascog, Rothesay
Macdonald, P., The Douglas Hotel, Brodick
M'Intyre, Daniel, Dunallan, Rothesay
M'Intyre, Wm., Mount Stuart, Rothesay
Mackay, Arch. M., Bruchag, Rothesay
M'Pherson, Donald, Queen's Hotel, Rothesay
Maddever, Dr J. C., 19 Battery Place, Rothesay
Martin, John, Arndahoo, Rothesay
Murray, Patrick, Strabane, Brodick
Paterson, James, Whitehouse, Lamlash
Robertson, Robert, Breakough, Millport
Stewart, John, Upper Ardroscadale, Rothesay
Stuart, J. Windsor, Rothesay
Tod, James, Glenkill, Lamlash
Tod, William, Glenree, Lamlash

CAITHNESS.

Adam, Thomas, of Lynegar, Wick
Brims, James, Thurso
Brock, John, Aukhorne, Wick
Brown, George, Watten Mains, Watten
Cameron, Duncan, Banker, Thurso
Clyne, David, Reaster House, Wick
Dunbar, Garden Duff, of Hempriggs
Gill, John, Blingerry, Wick
Gunn, Alexander, Dale, Halkirk, Thurso
Gunn, James, Sibster, Wick
Henderson, Alexander, of Stemster, Thurso
Henderson, A. W., of Bilbster, Wick
Henderson, John, W.S., Banker, Thurso
Horne, Edward Wm., of Stirkoke
Keith, Peter, Factor, Barogill Castle, Wick
Laing, William, Skaill, Thurso
M'Beath, James, Brims, Thurso
Mackay, Wm., Melness, Princes St., Thurso
Miller, John, Scrabster, Thurso
Muckhart, James, Berriedale, Dunbeath
Paterson, Wm. Innes, Armadale, Thurso
PORTLAND, The Duke of
Purves, James, Barrogall Mains, Wick
Purves, Thomas, Rhifail, Bettyhill, Thurso
Purves, William, Thurdistoft, Thurso
Sandison, Marcus, Hempriggs, Wick
SINCLAIR, Sir J. G. T., of Ulbster, Bart., M.P.
SINCLAIR, Sir Robert C., of Stevenson, Bart.
Sinclair, W. S. Thomson, of Freswick
Smith, James, of Olrig, Thurso
Sutherland, Alex., Rampyards, Watten
Sutherland, George, of Forse, Wick
Tait, Wm. Reid, Mina Villa, Thurso
Traill, James Christie, of Rattar
Waters, George S., Tistermains, Halkirk Road

CLACKMANNAN.

Allan, William, Park, Clackmannan
Archibald, Francis, Blackfaulds, Alloa
BALFOUR of Burleigh, Lord
Blair, James, of Glenfoot, Tillicoultry
Christie, John, of Cowden
Connal, Wm., Solsgirth, Dollar
Crawford, John, High Street, Alloa
Drysdale, David, Lorne Hill, Alloa
Fernie, James A., Hilton, Alloa
Fisher, Donald, Jellyholm, Alloa
Galashan, Charles C., Saddler, Alloa
Geekie, Peter M., Dollar
Gibson, Thomas, Sheriffyards, Clackmannan
Greig, Jas. A., Woodville, Dollar
Haig, J. R., of Blairhill, Dollar
Haig, W. J., of Dollarfield, Dollar
Henderson, Robert, Nether Carsebridge, Alloa
Kinross, John, Hillend House, Clackmannan
Knox, Robert, Woodside, Cambus, Alloa
Leishman, James, of Broomrigg, Dollar
Lyall, Robert, Kellybank, Dollar
Macnab, Alex., of Middleton Kerse, Menstrie
Macnab, Jas., Glenochil House, Menstrie
M'Queen, James, Divers Wells, Alloa
MAR and KELLIE, The Earl of
Marr, Thomas, Kennet, Alloa
Mitchell, Alex., Tillicoultry House
Mitchell, Andrew, Alloa
Moir, James M'Arthur, of Hillfoot, Dollar
Moubray, John James, of Naemoor, Dollar
Orr, James, of Harvieston, Dollar
Robertson, Rev. A. Irvine, Clackmannan
Robertson, Alex., Schaw Park, Alloa
Simpson, James, Tower, Alloa
Smeaton, Rev. John, Tullyallan Manse, Alloa
Thomson, Thomas, Bankhead, Alloa
Wilkie, David, Castle Campbell Hotel, Dollar
Young, George, Auctioneer, Dollar
Younger, George, Brewer, Alloa

DUMBARTON.

Anderson, John, Dullatur, Cumbernauld
ARGYLL The Duke of, K.T.
Begg, Robert, Blarnile, Luss
Black, James, of Auchentoshan, Duntocher
Blair, Robert, Inversnaid Hotel, Lochlomond
Breingan, A., Merchant, Helensburgh
Brock, Wm., Barns of Clyde, Yoker
Brown, A. J. Dennistoun, of Balloch, Alexandria
Buchanan, Alexander, Norwood, Milngavie
Buchanan, Andrew, of Auchentorlie, Bowling
Buchanan, David, Garscadden Mains, New Kilpatrick
BUCHANAN, Sir Geo. H. Leith, of Ross, Bart.
Bulloch, Archd., Milliken, East Kilpatrick
Burns, J. W., of Kilmahew, Cardross
Burt-Wright, W., Auchinvole Castle Croy
Calder, James, Colgrain. Cardross
CAMPBELL, Sir Archd. S. L., of Succoth, Bart.
Campbell, Archd., Factor, Rossdhu, Luss
Campbell, C., of Colgrain
Campbell, J., of Tillichewan, Alexandria
Campbell, N. C., of Barnhill
Colquhoun, George, Shemore, Luss
COLQUHOUN, Sir James, of Luss, Bart.
Colquhoun, Rev. J. E. Campbell, of Killermont
Coubrough, Archd., High Craigton, Milngavie
Cullen, William, Barbegs, Croy
Dalrymple, James, of Woodhead, Kirkintilloch
Douglas, Archd. C., of Mains, Milngavie
Duncan, James, yr. of Auchendavie, Kirkintilloch
Duncan, John, Auchenbee, Croy
Duncan, Thomas, Dullater, Cumbernauld
Erskine, H. D., of Cardross, Stirling
Ewing, Alex. Crum, of Keppoch, Cardross
Ewing, Humphrey Ewing Crum, of Strathleven
Ferguson, John, Kipperoch, Dumbarton
Findlay, Col. John, Woodbank, Alexandria
Findlay, R. E., of Boturich, Alexandria

Galbraith, John, Edentaggart, Luss
Geils, J. E., of Dumbuck
Gilmour, John, of Mount Vernon, Row
Gilmour, Wm. E., Woodbank, Alexandria
Glen, James, Stronafyne, Arrochar
Graham, George, jun., Easter Board, Gartshore, Croy
Gray, John, Merchant, Helensburgh
Jamieson, Wm., of Shandon, Helensburgh
Jardine, Andrew, Ballemenoch, Helensburgh
Kirkwood, Allan, Killermont, Maryhill
Lennox, James, Doune, Glendouglas, Luss
Lumsden, James, of Arden, Alexandria
Macdonald, John, Belmore, Gareloch, Helensburgh
M'Farlan, John, Faslane, Garelochhead
M'Farlane, Colin, Strone, Glenfruin, Garelochhead
M'Farlane, Duncan, Greenfield, Garelochhead
Macfarlane, Duncan, Torr, Helensburgh
M'Indoe, James, Glenmolachan, Luss
MacIndoe, Robert, Merkins, Alexandria
Mackenzie, John, Duchlage, Cove
Mackenzie, Robert D., of Caldarvan, Alexandria
Mackinlay, William, Ardoch, Cardross
Maclachlan, Colin, Woodend, Helensburgh
M'Murrich, James, Stuckievullich, Arrochar
M'Nab, Donald, Duchlage, Luss
M'Nab, John, Hotel, Arrochar
M'Nab, Robert, Farmer and Innkeeper, Luss
M'Nair, Robt., Westertown, New Kilpatrick
Martin, Donald T., Auchendennan, Bonhill
Martin, John M., of Auchendennan, Bloomhill, Cardross
Milne, J., Union Bank of Scotland, Helensburgh
Mitchell, Duncan, Darroch, Luss
Montgomery, Wm., jun., Parkend, Helensburgh
Muir, M. A., Ardenvohr House, Row
Park, Alex., Gartshore, Croy, Glasgow
Paul, Robert, Laigh Park, Milngavie
Rankin, Robert, Inchterf, Kirkintilloch
Renwick, Robert, Dalmuir Farm, Dalmuir
Sharp, James, Helensburgh
Sheriff, George, jun., Glengyle, Inversnaid
Simpson, John, Drumfork, Helensburgh
Taylor, M., Letter Farm, Cove
Turnbull, Stewart, Bonhill Place, Renton
White, James, of Overton, Dumbarton
White, John, Ardencaple, Helensburgh
Wilson, John, of Finnich Malise
Young, James, Broadholm, Duntocher

DUMFRIES.

Adam, John, Closeburn Castle, Thornhill
Anderson, Geo., of Woodhouse, Ecclefechan
Anderson, John, Chapel, Moffat
Anderson, Thomas B., Solicitor, Dumfries
Arundel, W. F. Hunter, of Barjarg, Auldgirth
Austin, James C., The Gill, Cummertrees, Annan
Austin, William, Bank Agent, Thornhill
Baird, John, Hall, Kirconnel, Sanquhar
Baird, John, Solicitor, Lockerbie
Baird, John, jun., Solicitor, Lockerbie
Baird, Thomas, Courance, Lockerbie
Beattie, James, Newbie House, Annan
Beattie, John, Bulmansknowe, Canonbie
Beattie, Simon, Annan
Beattie, William J. P., Newbie, Annan
Bell, Alexander, Stobahill, Lockerbie
Bell, William, Todholes, Annan
Berwick, John, Allanbank, Dumfries
Borland, John, Auchencairn, Closeburn, Thornhill
Borland, William, Townfoot, Closeburn Thornhill
Borthwick, Alex. Hay, Hopsrig, Langholm
Borthwick, J. J. M., Lymeholm, Langholm
Borthwick, Thos. Chalmers, Hopsrig, Langholm
Bramwell, John, Blackaddie, Sanquhar
Broatch, George, Thwait, Annan
Brodie, Wm., of Bush, Barkerland, Dumfries
Brook, Edward, Hoddam Castle, Ecclefechan
Brown, David, Ellerslie, Kirkmahoe
Brown, James, Hardgrave, Lockerbie
Brown, James Greig, Mouswald, Dumfries
Brown, John C., Between-the-Waters, Ecclefechan
Brown, T. M., Crawfordton Lodge, Thornhill
Bruce, James, March Hill, Dumfries
Bryden, William, Ironmonger, Lockerbie
Brydon, H., Kinnelhead, Moffat
Brydon, James, Kinnelhead, Moffat
BUCCLEUCH and QUEENSBERRY, the Duke of, K.G.
BUCCLEUCH and QUEENSBERRY, The Duchess of
Byres, James Edward, Greenrae, Canonbie
Campbell, James G., of Killyleoch
Carlyle, T. J., of Templehill, Waterbeck, Ecclefechan
Carruthers, John, of Miln, Kirkhill, Moffat
Carruthers, John, Tundergarth, Lockerbie
Carruthers, Joseph, Annan Bank, Lockerbie
Carruthers, Joseph, Banker, Sanquhar
Carruthers, R. B., Huntingdon Lodge, Dumfries
Caven, Thos., Birkshaw, Glencairn, Dunscore
Charlton, John, Corn Merchant, Dumfries
Chrystal, Wm., Gilchristland, Thornhill
Church, J., Sark Tower, Canonbie
Common, James, Waterbeck, Ecclefechan
Common, John, South Corrielaw, Lockerbie
Connell, J. W. F., of Auchencheyne
Cormack, John F., Solicitor, Lockerbie
Crabbie, John, of Duncow
Crabbie, John M., yr. of Duncow
Craig, Daniel, Barr, Sanquhar
Craig, Wm., Laurel Bank, Dumfries
Cranston, James, Holestane, Thornhill
Critchley, J. A., Stapleton Tower, Annan
Crosbie, William G., S.S.C., Dumfries
Crawford, James, Brydekirk Mains, Annan
Dalziel, Adam, Arkland, Penpont
Dalziel, Alex., Glenwharrie, Sanquhar
Dalziel, George, Merkland, Thornhill
Dalziel, George, Auchengruith, Sanquhar
Dalziel, James, Grove Hill, Thornhill
Dalziel, Robert, Druidhall, Penpont
Dickson, John H., Dabton, Thornhill
Dickson, R.A., Merchant, Dumfries
Dickson, T., Drumcruil, Thornhill
Dobie, David, Banker, Lockerbie
Dobie, Douglas, Drumcork, Thornhill
Douglas, A. H. Johnstone, of Lockerbie
Farish, Samuel, Kirkland, Lockerbie
Farish, Samuel T., jun., Kirkland, Lockerbie
Farish, Wm. R., Tinwald Parks, Dumfries
Ferguson, John, Seed Merchant, Sanquhar
Fergusson, Ninian, Sanquhar
Fergusson, William, Donkins, Ecclefechan
Fleming, Gavin, Crowdie Knowe, Ecclefechan
Fryer, John J., Musicseller, Dumfries
Gillespie, Denholm, Waterhead, Dryfe, Lockerbie
Gillespie, Rev. John, Mouswald Manse Dumfries
Gillespie, Wm. C., Annanbank, Lockerbie
Gladstone, Thos. S. of Capenoch, Thornhill
Gordon, Henry, Sheriff-Clerk, Dumfries
Graham, John, of Shaw, Lockerbie
Gray, Alex., Tanlawhill, Langholm
GRIERSON, Sir A. D., of Lagg, Dumfries

Grieve, Archd., Albyrigg, Canonbie
Haining, J. J., Skipmyre, Lochmaben
Henderson, George, Tarraughtie Cottages, Dumfries
Henderson, James, Kelloside, Sanquhar
Hewitson, J., Anchenbainzie, Thornhill
Hiddleston, John, Kilroy, Dalswinton
Hutchison, Jas., Mouswald Farm, Dumfries
Hutton, Arthur, Comlongan Castle, Annan
Hyslop, Wm., Clenries, Sanquhar
Irvine, B., Bardennoch, Auldgirth
Irving, J. Bell, of Whitehill, Lockerbie
Irving, Samuel, Carco, Kirkconnel
JARDINE, Sir Alex., of Applegirth, Bart.
Jardine, A. M., of Granton, Moffat
Jardine, James, of Larriston, Dryfeholm,
Jardine, Robert, of Castlemilk, M.P., Lockerbie
Johnston, James, Gairloch, Dumfries
Johnston, Thomas, Lochhouse, Moffat
Johnston, William, of Cowhill, Dumfries
Johnstone, James, Banker, Dumfries
Johnstone, James, Hunterheck, Moffat
Johnstone, John, of Halleaths, Lockerbie
Johnstone, John A., Archbank, Moffat
Johnstone, J. J. Hope, of Annandale, Raehills, Lockerbie
Johnstone, Miss Hope, of Annandale, Marchbank Wood, Moffat
Johnstone, Michael, Archbank, Moffat
Johnstone, Robert, Polmoodie, Moffat
Johnstone, Walter, Alton, Moffat
Kennedy, David, Castlehill, Dumfries
Kennedy, James, of Sundaywell, Brandleys, Sanquhar
Kennedy, John B., Stenhouse, Thornhill
Kennedy, J. G., Newlands, Dumfries
Kennedy, Wm., Kirkland, Sanquhar
Kennedy, Wm., Dalmakerran, Thornhill
Kerr, Abraham, Castlehill, Durrisdeer
Kerr, Archd., Upper Dormont, Lockerbie
Kerr, John, Blountfield, Dumfries
Kerr, Thomas, Whitehill, Sanquhar
Kirkpatrick, David, Linns, Torthorwald
Kirkpatrick, James, Redhills, Torthorwald
Kirkpatrick, James, Auctioneer, Annan
Kirkpatrick, Samuel, West Roucan, Dumfries
Leggat, Alex., Killyleoch, Dunscore
Lennox, David, Merchant, Dumfries
Leny, W. Macalpine, of Dalswinton, Dumfries
Lindsay, James, Holehouse, Penpont
Lindsay, James, Whitecastles, Lockerbie
Little, James, Sark Tower, Canonbie
Little, James Church, Caulfield, Langholm
Little, John, Meikleholmside, Moffat
Little, William, Burnfoot, Langholm
Lorimer, William, Rigg, Sanquhar
Lyon, Thomas A., Whitecroft, Lockerbie
M'Call, George, Burrance, Kirkmichael, Lockerbie
M'Call, James, Caitloch, Moniaive
M'Clure, Wm., Banker, Lockerbie
M'Connel, Frederic, of Blackyett, Annan
MacCowan, A., of Newtonairds, Holywood
Macfarlan, George, Closeburn Mains, Thornhill
M'Gill, James, Banker, Dumfries
M'Gregor, Robert, Bellridding, Dumfries
Mackay, D., Harkledale, Cummertrees, Annan
Mackie, John, Sarkshields, Ecclefechan
M'Kinnel, J. B. A., Iron Works, Dumfries
M'Lean, James, Auctioneer, Annan
M'Millan, John, of Glencrosh, Moniaive
M'Tier, John, of Ladyfield, Netherwood, Dumfries
M'Turk, Alex., Commercial Hotel, Sanquhar
MacVicar, Rev. J. G., D.D., Moffat
Malcolm, W. E., of Burnfoot, Langholm
Marshall, Thomas, The Howes, Annan
Martin, Thomas, Muiryhill, Thornhill
Martin, William, Dardarroch, Dumfries
Martin, William, Town Clerk, Dumfries
Mathieson, Daniel, Banker, Lockerbie
Maxwell, Capt. Heron, yr. of Springhill, Ecclefechan
Maxwell, Francis, of Gribton, Dumfries
MAXWELL, George, of Broomholm, Langholm
MAXWELL, Sir John Heron, of Springkell, Bart., Ecclefechan
Maxwell, Joseph, Seedsman, Thornhill
Maxwell, Maxwell Hyslop, of the Grove, Dumfries
Maxwell, General Harley, of Portrack, Dumfries
Milligan, James, Hayfield, Thornhill
Milligan, John, Merkland, Dunscore
Minto, John D., Dumfries
Mitchell, John, jun., Boreland, Hutton, Lockerbie
Mitchell, Joseph, Bankhead, Dalswinton, Dumfries
Mitchell, Joseph M., Burnscairth Green, Dumfries
Moffat, James, Gateside, Kirkconnell
Moffat, Thomas, Drumbuie, Sanquhar
Monilaws, Rev. James J., Middlebie Manse, Ecclefechan
Murray, Allan, Castlemilk Mill, Lockerbie
Paterson, David J., Watch Hall, Annan
Paterson, John, Howcleuch, Moffat
Paterson, J. Jardine, of Balgray, Lockerbie
Paterson, J. W., Terrona, Langholm
Paterson, Robert B., V.S., Irving Street, Dumfries
Paterson, William, of Brocklehurst, Mouswald, Dumfries
Payne, James, Thornhill
QUEENSBERRY, The Marquis of
Rae, Wm., Gateslack, Thornhill
Reid, J., Corsebank, Sanquhar
Rennie, James, Brewer, Dumfries
Richardson, Robert A., Dunesk, Lockerbie
Richardson, William, Floshend, Gretna
Rogerson, G., of Pearseby Hall, Lockerbie
Rogerson, James, of Wamphray, Lockerbie
ROLLO, Lord
Rorrison, John, Dumfries
Scott, A., Hillside House, Lockerbie
Scott, Robert A., Dormont Grange, Lockerbie
Semple, Wm., Mouswald Bank, Dumfries
Sloan, D., Coachbuilder, Dumfries
Sloan, J., Coachbuilder, Dumfries
Smith, Edward, Netherholm, Kirkmahoe
Smith, James T., Parkend, Lockerbie
Smith, Robert, Dalfibble, Dumfries
Smith, Thomas F., Dumfries
Smith, William, Banker, Moniaive
Steel, Thos. G., Gladenholm, Dumfries
Steuart, Patrick, Middlegill, Moffat
Stewart, D. W., of Grange, Lockerbie
Stewart, D., Mosspebble, Langholm
Stewart, Peter, Dornoch Mains, Annan
Stobo, Andrew, Porterstown, Thornhill
Struthers, Wm., Logan Mains, Canonbie
Taylor, Joseph, Potholm, Langholm
Thompson, Alex., Ironmonger, Dumfries
Thomson, J. S., M'Cheynston, Dumfries
Thomson, Robert, of Brae, M'Cheynston
Thomson, Wm., M'Murdieston, Dunscore
Todd, Alex., Mouswald Grange, Dumfries
Turnbull, Thos., Castlebank Mills, Dumfries
Villiers, F. E., Closeburn Hall, Thornhill
Walker, Lieut.-Col. Geo. C., of Crawfordton, Thornhill
Wallace, Robert, Twiglees, Lockerbie
Warwick, A., Outer Woodhead, Canonbie
Warwick, W., Glencartholm, Canonbie
Whyte, Rev. R., Dryfesdale, Lockerbie
Wightman, John Seton, of Courance
Wilkin, Thos., Tinwald Downs, Dumfries
Willison, D. C., Dalpeddar, Sanquhar
Wilson, George, jun., Dalveen, Thornhill

Wilson, James R., Banker, Sanquhar
Wilson, P. M'C., Nether Gribton, Dumfries
Wilson, Wm., Butknowe, Sanquhar
Wright, Thomas, Bengall, Lockerbie
Yorston, Capt. M. C., of Tinwald, Irvine House, Langholm
Young, John, Netherwood Bank House, Dumfries
Young, R. W., Rockhall, Dumfries
Younger, Wm., Auchen Castle, Moffat

EDINBURGH.

ABERCORN, The Duke of, K.G.
Adam, Robert, City Chamberlain, Edinburgh
Adam, Stephen, 11 Hillside Crescent
Ainslie, Daniel, 48 Moray Place
Ainslie, David, of Costerton, Blackshiels
Ainslie, John, Fairfield, Loanhead
Ainslie, John, jun., Hillend, Loanhead
Aitchison, James, 80 Princes Street
Aitchison, Lieut.-Col., of Drummore, Musselburgh
Aitken, Dr A. P., St Anns, Morningside Drive
Aitken, James, Westfield, Eskbank
Aitken, John, sen., V.S., Causewayside
Aitken, John M., 24 St Andrew Square
Aitken, Thomas, Listonshiels, Balerno
Aitken, T., 5 Grosvenor Crescent
Allan, Alex., Advocate, 5 Hillside Crescent
Allan, James, Clifton, Mid-Calder
Allan, Wm., 24 St Andrew Square
Amour, John, Cramond Bridge
Anderson, Charles, jun., 377 High Street
Anderson, John, 14 Dean Terrace
Anderson, John S., Dalhousie Mains, Dalkeith
Anderson, William, 10 Thirlestane Road
Anderson, W. M., Pirntation, Stow
Anderson, W. W., Norton Mains, Ratho
Archbald, T., of Viewbank, Lasswade
Archibald, James, Overshiels, Stow
Archibald, John, Overshiels, Stow
Auld, Peter, Buteland, Balerno
Baillie, John, Fullarton, Penicuik
Bain, W. P. C., Lochrin Iron Works, Edinburgh
Baird, Colin C., V.S., Clyde Street
BAIRD, Sir James Gardiner, of Saughton Hall, Bart.
Baird, John W., 26 South Back of Canongate
Balfour, Prof. J. H., M.D., Inverleith House
Balfour, J. H., 7 Glencairn Crescent
Balfour, John M., of Pilrig, W.S.
Barbour, G. F., 11 George Square
Barstow, Chas. M., C.A., 32 India Street
Bauchope, T., East Brucefield, West Calder
Baxter, Edmund, W., 9 Rutland Square
Bayley, George, 13 Regent Terrace
Beith, Donald, W.S., 15 Grosvenor Crescent
Belfrage, A. W., C.E., 1 Erskine Place
Bell, John, 35 Dublin Street
Berry, Walter, 11 Athole Crescent
Bertram, D. N., St Katherine's Works, Sciennes
Bertram, W., St Katherine's Works, Sciennes
Binny, Andrew, 9 Hart Street
Black, Robert, Liberton Mains, Liberton
Blackwood, William, 45 George Street
Blair, John, W.S., 9 Ettrick Road
Blair, Patrick, W.S., 7 York Place
Blues, Andrew A., 29 Minto Street
Bonnor, G. H., 55 Grange Loan
Borthwick, John, of Crookston, Heriot
Braid, Andrew, Humbie, Kirknewton
Brechin, James, 1 West Newington Terrace
Brockley, Robert M., Gourlaw, Rosewell
Brodie, James, 9 Nelson Street
Brodie, J. C., W.S., 26 Moray Place
Brodie, Thomas D., W.S., 9 Ainslie Place
Brown, George, 57 Hanover Street
Brown, Richard, C.A., 29 St Andrew Square
Brown, Thomas, Pentland Mains, Loanhead
Brown, T., 6 Argyle Crescent, Joppa
Brown, Wm., Currievale, Currie
Brownlie, J., Nether Alderston, Mid-Calder
Bruce, E., 26 Greenside Place
Bruce, John, W.S., 7 Melville Crescent
Bryce, Andrew, Craigentinny, Edinburgh
Bryce, Wm. C., 26 South Back of Canongate
BUCCLEUCH and QUEENSBERRY, The Duke of, K.G.
BUCCLEUCH and QUEENSBERRY, The Duchess of
Buchan, Alex., 72 Northumberland Street
Buchanan, Archd., of Curriehill, Currie
Buchanan, John, C.E., 24 George Street
Buist, R., 32 Castle Terrace
Burnet, J., Dolphington, Cramond Bridge
Burnett, Alex. E., W.S., 47 Heriot Row
Burnett, George, Advocate, 21 Walker Street
Burnley, W. F., 24 Ainslie Place
Burton, M. B., Rosewell Mains, Rosewell
Burton, J. Tait, of Toxside, Gorebridge
Burton, J., Rosewell Mains, Rosewell
Caird, Alex. M'Neel, 13 Wardie Avenue
Calder, W., 19 Archibald Place
Campbell, Alex., 6 Charlotte Square
Campbell, Arthur, W.S., 4 Randolph Crescent
CAMPBELL, Sir Archibald S. L., Bart., 23 Moray Place
Campbell, Major D. P., New Club
Campbell, James G., 23 Windsor Street
Campbell, O. G., 5 Oxford Terrace
Carfrae, T., 9 Osborne Terrace
Carnegie, James, W.S., 16 Windsor Street
Carphin, James R., C.A., 14 Hanover Street
Carter, James, 5 Mayfield Gardens
Chambers, Robert, 10 Claremont Crescent
Chirnside, John, 14 Saxe-Coburg Place
Christie, C. J., Cherrybank, Newhaven Road
Christie, Captain James, 1 Torphichen Street
Christie, John, 19 Buckingham Terrace
Church, D. M., 25 Minto Street
Clapperton, John, Gillsland, Spylaw Road
CLERK, Sir George Douglas, of Penicuik, Bart.
Clerkson, Alexander, Kirknewton
Cockburn, Archd. D., 6 Athole Crescent
Cook, Henry, W.S., 61 Castle Street
Cook, John, W.S., 11 Great King Street
Cooper, Wm. S., New Club
Cousin, George, 140 Princes Street
Cowan, C., Wester Lea, Murrayfield
Cowan, C. W., yr. of Logan House, Penicuik
Cowan, George, Valleyfield, Penicuik
Cowan, James, 35 Royal Terrace
Cowan, John, of Beeslack, Milton Bridge
Cowan, John, W.S., 12 Hill Street
Cowan, John, 21 Albert Street
Cowan, Robert, W.S., 9 Carlton Terrace
Cowan, R., 13 Greenside Street
Carbbie, J., 22 Royal Terrace
Crabbie, John M., 33 Chester Street
Craig, David, 4 Pitt Street, Portobello
Craig, James, 38 Manor Place
CRAIG, Sir J. H. Gibson, of Riccarton, Bart.
Craig, Dr William, 7 Lothian Road
Craik, John, The Bush, Roslin
Cranstoun, G. C. T., of Dewar, Harvieston, Gorebridge
Crawford, Adam, Royal Terrace
Crichton, Hew, S.S.C., 13 Nelson Street
Crichton, Hew Hamilton, W.S., 13 Nelson Street
Crichton, James, 41 George Street
Crichton, Jas. Arthur, 13 Nelson Street
Croall, Robert, Craigcrook Castle, Blackhall
Crombie, Alex., W.S., Albert Buildings
Cross, Alex., 60 North Bridge
Cunningham, A. G., Rosebank, Currie
Cunningham, C., V.S., Slateford
Cunningham, J. C., 102 West Bow

CUNNYNGHAM, Sir R. K. A. Dick, of Prestonfield, Bart.
Currie, James, Eastwood, Gorebridge
Currie, James J., Torcraik, Gorebridge
Curror, David, 25 Northumberland Street
Curror, John, Inchdrewer, Colinton
Curror, John F., Damhead, Murrayfield
Curror, P. R., Myreside, Edinburgh
Daish, John, 5 South St Andrew Street
Dalgleish, George, Rosebery Mains, Temple
Dalgleish, John J., 8 Athole Crescent
Dalgleish, L., 22 Coates Crescent
DALHOUSIE, the Earl of
Dallas, D. F., S.S.C., 3 Queen Street
Dalziel, George, W.S., 25 Drumsheugh Gardens
Darling, J. F. Stormonth, Bank of Scotland
Davidson, Donald, 16 Merchiston Park
Davidson, H., of Muirhouse, Davidson's Mains
Davidson, James J., Dean Park, Balerno
Davidson, W. J., 32 Drumsheugh Gardens
Deans, Peter D., Mount Charles, Portobello
DEAS, Hon. Lord
Dewar, James Cumming, of Vogrie, Ford
Dick, Dr John, 19 Dalrymple Crescent
Dickson, Prof. Alex., M.D., 11 Royal Circus
Dickson, James J., C.A., 13 Clarendon Crescent
Dickson, T. G., 3 North St. David Street
Dickson, W. T., W.S., 11 Hill Street
Dobbie, John, Campend, Dalkeith
Donald, Andrew, Spittal, Penicuik
Donald, John, 49 Forrest Road
Douglas, Bentlem, Peffer Mill, Liberton
Douglas, F. B., Advocate, 21 Moray Place
Dowell, Alex., 13 Palmerston Place
Downie, Hay, Corstorphine
Drybrough, Thos., 31 Royal Terrace
Dudgeon, John, 37 Chalmers Street
Duncan, William, S.S.C., 13 Abercromby Place
Duncan, William, 18 York Place
Duncan, W. J., 29 Abercromby Place
Dundas, D., Advocate, 46 Heriot Row
Dundas, Ralph, W.S., 16 St Andrew Square
Dundas, Robert, of Arniston, Gorebridge
Dundas, Wm. J., C.S., 16 St Andrew Square
Dunlop, George, W.S., 14 George Street
Dunn, Malcolm, The Gardens, Dalkeith
Dykes, James, Cuicken, Penicuik
Edgar, John, Kirkettle, Roslin
Edgly, Robert, Gilmerton
Edgly, Thomas, Gilmerton
Edmonstone, Admiral Sir William, Bart., 11 Ainslie Place
Elder, Jas., Whitehill Mains, Musselburgh
Elder, James, Rodinglaw, Currie
Ellis, O. W., 26 George Street
ELPHINSTONE, Lord
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Fergus, W., 1 Queen's Place, Leith Walk
Ferguson, Archd. A., 198 High Street, Portobello
Ferguson, John, Burghlee, Loanhead
Ferguson, Wm., 21 Manor Place
Field, Rev. Ed. B., 6 Glencairn Crescent
Finlay, John H., W.S., 13 Castle Street
Fleming, George, Crofthead, Mid-Calder
Fleming, James S., Royal Bank of Scotland
Flint, David, Drylaw Mains, Davidson's Mains
Forbes, A. M., 6 St Andrew Square
Forbes, Thomas, Road Surveyor, Mid-Calder
Forbes, W., of Medwyn, 17 Ainslie Place
Ford, G., Saughton Hall Mains, Murrayfield
Ford, William, of Ferneyside, Liberton
Fordyce, J. D., 34 Great King Street
Forman, Jn. N., W.S., 8 Heriot Row
Forman, John, 51 Great King Street
FORREST, Sir John, of Comiston, Bart.
Forrester, John, 39 Broughton Place
Foulis, David, 61 George Street
Fraser, Alex., Canonmills Lodge
Fraser, James, 6A Bristo Place
FRASER, The Hon. Lord
Fulton, Andrew. 86 George Street
Garden, William, Parson's Pool, Bonnyrigg
Gardner, George, Carrington Barns, Gorebridge
Gardner, Wm., East Langton, Mid-Calder
Gartshore, J. M., of Ravelston, Blackhall
Gibson, Francis, Woolmet, Dalkeith
Gibson, James, 2 Chalmers Crescent
Gibson, James, Clifton Hall Mains, Ratho
Gibson, T., Bainfield, Fountainbridge
Gibsone, Major-General, of Pentland
Gillespie, John, W.S., 53 Northumberland Street
Gillon, Colonel, 13 Royal Terrace
Gilmour, W. J. L., of Craigmillar, New Club
Girdwood, Robert, Tanfield, Edinburgh
Glendinning, Alex., Hatton Mains, Ratho
Glendinning, G. R., Hatton Mains, Ratho
Glendinning, J. P., Rawfarm, Mid-Calder
Gloag, Wm. Ellis, 6 Heriot Row
Goldie, R. G. M., 3 Comely Green Place
Gowans, James, Rockville, Napier Road
Graham, Alexander, Penicuik
Grant, Rev. James, D.C.L., D.D., 15 Palmerston Place
Grant, R., 107 Princes Street
Grey, E. A. Stuart, 19 Manor Place
Gray, Jas., Braehead Mains, Cramond
Gray, Robert Smith, Southfield, Duddingston
Gray, Wm., Southfield, Duddingston
Greig, George, 1 India Buildings
Greig, Peter M., 56 Inverleith Row
Greig, R. M., Fountainbridge
Grieve, John, Balmoral Hotel, Princes Street
Gulland, W. J. Monkton Hall, Musselburgh
Hagart, J. V., W.S., 140 Princes Street
Haig, W. H., Broomfield, Davidson's Mains
Halkett, Lieut.-Col. J. C., of Cramond
Hall, William, LintonCottage, Penicuik
Hamilton, Claude H., Preston Hall, Dalkeith
Hamilton, J. A., 41 George Street
Hamilton, Robert, 29 St James Square
Hamilton, Wm., of Cairns, Mid-Calder
Handyside, W., 11 Claremont Crescent
Harley, D., Hillwood Cottage, Ratho
Harper, William, Sheriffhall Mains, Dalkeith
Harrison, George, Lord Provost of Edinburgh
Harrison, G. H., 3 Warrender Park Road, East
Hay, Alexander, 4 Duke Street
Hay, James, 28 Queen Street
Hay, Wm., 17 Hill Street
Henderson, C. J., 6 Drumsheugh Gardens
Henderson, John, 28 Frederick Street
Henderson, Thos., 6 Saville Road
Henry, John, S.S.C., 29 Rutland Square
Herries, A. Y., 16 Heriot Row
Hill, John, 12 Clarence Street
Hogg, Henry, Symington Mains, Stow
Hogg, Robert, Rosemay, Leadburn
Home, David Milne, 10 York Place
Hood, Archibald, Rosewell
Hood, Robert, M.D., 5 Salisbury Road
Hope, Alexander, Pinkie House, Musselburgh
Hope, Jas., W.S., 42 Charlotte Square
Hope, James Edward, Belmont, Murrayfield
HOPE, Sir John David, of Pinkie, Bart
Hope, John Wilson, 10 Drumsheugh Place
Hope, William P., Leith
Horne, T. E. O., W.S., 19 Grosvenor Street
Horne, T., jun., 19 Grosvenor Street
Houldsworth, A., Springfield House, Lasswade
Howe, Alex., W.S., 32 Charlotte Square
Hunter, Alex., Nethershiel, East Calder
Hunter, E. A., W.S., 121 Princes Street
Hunter, John, Nethershiel, East Calder
Hunter, J., jun., Woodhall, Mains, Juniper Green

Hunter, Robt., 10 Ainslie Place
Hutchison, J. T., 12 Douglas Crescent
Hutchison, Robt., Merchiston Avenue
Hutchison, R., 29 Chester Street
Hutchison, Thomas, Bellfield, Duddingston
Hutchison, Thomas, Broomhill, Loanhead
Inch, Robert, 1 Victoria Street
Inglis, A. W.. 30 Abercromby Place
Inglis, H. M., 31 Abercromby Place
INGLIS, Right Hon. John, Lord Justice-General
Inglis, John, Junction Steam Mills, Leith
Inglis, John, of Redhall
Inglis, Peter, East Pilton, Ferry Road
Innes, G. M., 32 Buckingham Terrace
Irvine, A. F., of Drum, 25 Castle Terrace
Jack, Gavin, North Gyle, Corstorphine
Jack, Thos,, Hermiston
Jamieson, G. A., C.A., 24 St Andrew Square
Jamieson, J. A., W.S., 66 Queen Street
Jamieson, Wm. H., Thornlie Villa, Loanhead
Jeffrey, David, 14 Randolph Crescent
Jenkinson, A. D., 10 Princes Street
Johnston, Alex., Hailes, Slateford
Johnston, L., 11 Castle Street
JOHNSTON, Sir W., of Kirkhill, Gorebridge
Johnstone, C., 8 Glengyle Place
Jones, Charles Digby, 12 Chester Street
Kay, Wm., Broomieknowe, Lasswade
Kennoway, Robt., Burnhead, Lasswade
Kerr, Robert, 9 Great Stuart Street
Kidd, Walter, Balleny, Currie
King, James, West Mills, Colinton
King, J. F., Chambers Street
Kinnear, C. G. H., 12 Grosvenor Crescent
Kirk, John, W.S., 119 Princes Street
Kirkwood, Alex., 9 St James Square
Laing, Alexander, S.S.C., Glenord, Edinburgh
Lamont, John, Johns Cottage, Henderson Row
Landale, James, Cockburnhill, Balerno
Landale, Thomas, 4 Mayfield Terrace
Lauder, Alex., Goshen, Musselburgh
Laurence, P., 57 Hanover Street
Laurie, John W., Mitchelston, Stow
Lawrie, Thos., Esperston, Gorebridge
Lawson, Chas., 34 George Square
Learmonth, Lieut.-Col. Alex., of Dean
LEE, The Hon. Lord
Leithhead, James, 8 Queensberry Terrace
Lindsay, Thos. S., 55 Castle Street
Lindsay, William, 7 Hermitage Hill, Leith
Lockhart, R., jun., 10 Polwarth Terrace
LOTHIAN, The Marquis of, K.T.
Lumsden, G., 30 Drumsheugh Gardens
Lyell, David, S.S.C., 39 Castle Street
Macadam, Dr S., Surgeons' Hall, Edinburgh
McCallum, A. I., 5 Grassmarket
M'Candlish, Jn. M., 27 Drumsheugh Gardens
M'Donald, D., 54 George IV. Bridge
MacDonald, William, 377 High Street
M'Dougal, Thos., Eskvale, Penicuik
M'Dowall, Andrew, Harelaw, Currie
M'Fadyean, Prof. J., Vet. College, Edinburgh
Macfie, C., of Gogarburn, Corstorphine
Macfie, D. J., of Borthwick Hall, Heriot
Macfie, R. A., of Dreghorn, Colinton
Macfie, Wm., of Clermiston, Corstorphine
M'Gowan, Robert, 2 Peel Terrace
M'Gowan, William, 2 Peel Terrace
M'Gregor, Donald, Royal Hotel, Edinburgh
Macgregor, Donald R., Merchant, Leith
M'Intosh, G., S.S.C., 87 George Street
Mackenzie, A., 19 Charlotte Square
Mackenzie, A. K., of Ravelrig, Currie
Mackenzie, A. D., Upper Grove Place
Mackenzie, John, New Club
Mackenzie, J., W.S., 16 Royal Circus
Mackenzie, J. Ord, W.S., 9 Hill Street
Mackenzie, J. W., W.S., 16 Royal Circus
Mackintosh, R. T., 10 Melbourne Place
M'Kirdy, General D. Elliot, New Club
Maclagan, Prof. D., 28 Heriot Row
Maclagan, R. C., M.D., 5 Coates Crescent
M'Laren, Alex., 11 Assemby Street, Leith
M'Laren, D., Newington House, Edinburgh
Maclean, H. F., W.S., 3 Hill Street
M'Minn, F., 1 Graham Street
M'Nair, J., 33 Moray Place
M'NEILL, Right Hon. Sir John, G.C.B.
Maconochie, R. B., W.S., 10 Hill Street
Macpherson, Prof. N., 2 Randolph Cliff
MacRitchie, D., C.A., 4 Archibald Place
Maitland, Henry, Mount Æolus, Portobello
Maitland, Sir J. Ramsay Gibson, of Barnton, Bart.
Maitland, Col. K. Ramsay, 26 Castle Terrace
Mann, W. S., S.S.C., 119 Princes Street
Mansfield, Jas. L., 8 Chester Street
Marjoribanks, Wm., 9 Learmonth Terrace
Mark, John, Craigend, Stow
Mark, R., Leven Street
Marshall, Wm. H., 25 Heriot Row
Martin, J., Beechwood Mains, Corstorphine
Mason, Robert, of Corstorphine Hill
Mather, Edward, The Lee, Edinburgh
Matthew, P. M., 32 Coates Gardens
Mears, Wm., 24 Buccleuch Street
Meikle, Wm., East Breich, West Calder
Melvin, A, R., Bonnington, Wilkieston
Melvin, Jas., Bonnington, Wilkieston
Menzies, D., 39 York Place
Menzies, Fletcher Norton, 3 George IV. Bridge
Menzies, Robert, S.S.C., 5 North St David St.
Menzies, Wm. J., W.S., 123 George Street
Merricks, J. L., Gunpowder Mills, Roslin
Mill, George, 5 Thistle Street
Millar, C. H., 5 Palmerston Place
Milne, Alex., 32 Hanover Street
Milne, Peter, 5 Linkfield, Musselburgh
Mitchell, Wm., S.S.C., 15 Magdala Crescent
Moir, Peter, Nottingham Place
Moir, William, Nottingham Place
Moncrieff, D. S., W.S., 24 George Square
MONCRIEFF, Lord, 15 Great Stuart Street
Monteith, B., Tower Mains, Liberton
Morton, James S., 6 St Andrew Square
Mortimer, T. A., 86 George Street
Munro, William, 34 St Andrew Square
Murdoch, G. Burn, St Bride's, Edinburgh
Murdoch, J. B., Greenhill Lodge, Edinburgh
MURE, Hon. Lord, 12 Ainslie Place
Mure, William J., 39 Heriot Row
Murray, Anth., W S., 141 George Street
Murray, Anthony G., C.E., 141 George Street
Murray, A. G., 7 St Colme Street
Murray R., 62 Grove Street
Murray, R., 7 Roxburgh Place
Murray, Thomas, Braidwood, Penicuik
Murray, T. G., W.S., 11 Randolph Crescent
Mutter, J., 29 Chalmers Street
Mylne, Thos., Niddrie Mains, Liberton
Napier, G., Coates Hall, Edinburgh
Nisbett, J M., of Cairnhill, Drum, Edinburgh
Niven, A. T., C.A., 6 Abbotsford Crescent
Nonnen, J. E., 36 Leamington Terrace
Norie, H. H., Union Bank, Edinburgh
Ogilvy, John, 4 Church Hill
Ovens, William R., Leith
Park, Ebenezer, Greenside Lane
Park, James, Stoneyhill, Musselburgh
Park, J. D., Greenside Lane
Park, William, Brunstane, Portobello
Pate, Andrew, Easter Middleton, Gorebridge
Paterson, D. A., Merchant, Leith
Paterson, George, Falhills, Penicuik
Paterson, James, of Bankton, Mid-Calder
Paterson, John, Meadowspott, Dalkeith
Paterson, Richard L., Langside, Dalkeith
Paterson, Thos., W.S., 81A George Street
Patten, James, Advocate, 7 Drummond Place

Pattison, A. D., 22 Belgrave Crescent
Paul, George M., C.S., 16 St Andrew Square
Peddie, J. D., M.P., 33 Buckingham Terrace
Pendreigh, George, Catcune, Gorebridge
Penman, John, Bonally, Colinton
Petrie, S. F., 350 Leith Walk
Phillip, David, S.S.C., 41 Charlotte Square
Philip, John, Polton East Mains, Lasswade
Pitman, Frederick, W.S., 11 Great Stuart St.
Plenderleith, A., Moorfoot, Gorebridge
Plummer, J., 11 Bruntsfield Place
Pringle, A. T., 29 Grassmarket
Pringle, D., Torquharn, Stow
Pringle, J., 1 Bellevue Place
Pringle, John, Garvald, Gorebridge
Pringle, Wm., Huntly Cote, Gorebridge
Proudfoot, T., Pinkiehill, Musselburgh
Ramsay, R. G. Wardlaw, of Whitehill, Rosewell
Rankine, John, 10 Melville Street
Reid, G. A., Leith
Reid, J. J., Advocate, 6 Great Stuart Street
Renwick, Wm., Corstorphine
Richardson, A., 28 Colville Place
Richardson, John, 59 Warrender Park Road
Richardson, Ralph, W.S., 19 Castle Street
Richardson, R., 16 Bruntsfield Place
Riddell, A., 1 Victoria Street
Ritchie, Charles, S.S.C., 20 Hill Street
Ritchie, D., 13 Windsor Street
Ritchie, J., 11 Morrison Street
Ritchie, W., of Middleton, Gorebridge
Robertson, Duncan, 73 Great King Street
Robertson, George, C.E., 47 Albany Street
Robertson, G. B., 1 Windsor Street
Robertson, Maj. J., United Service Club
Robinow, Adolph, 21 Clarendon Crescent
Rolland, A., 20 Athole Crescent
ROSEBERY, The Earl of
Ross, Alex., 66 Queen Street
Roughead, D., 24 Forth Street
Russell, Alex. James, C.S., 9 Shandwick Place
Rutherford, G., Monteath's Houses, Gorebridge
St Clair, J. S., 99 High Street, Musselburgh
Scoon, K., 46 Rankeillor Street
Scott, Alex., 3 Bellfield, Portobello
Scott, A. T. S., 1 Hill Street
SCOTT, Lord Charles, Dalkeith
Scott, D. F., Meadowfield, Duddingston
Scott, E. E., C.A., 10 Castle Street
Scott, Lieut.-Col. F. C., C.B.
Scott, James, 5 Grassmarket
Scott, Maj.-Gen. J. C., United Service Club
Scott, R. E., C.A., 21 Drumsheugh Gardens
Scott, Thos., 51 Grassmarket
SCOTT, Lord Walter, Dalkeith
Seton, George, 42 Greenhill Gardens
Seton, Henry, V.S., Tollcross
SHAND, Hon. Lord
Shand, John, M.D., 34 Albany Street
Simpson, Alex., Wallyford, Musselburgh
Simpson, George, 2 Lauder Road
Simson, C. S., 7 Nelson Street
Skene, Wm. F., W.S., 20 Inverleith Row
Skinner, W., of Corra, W.S., 35 George Square
Skirving, R. Scot 29 Drummond Place
Sligo, A. V. Smith, 5 Drummond Place
Smart, Jas., Liberton Park, Liberton
Smart, J. C., 54 George Square
Smith, A. D., C.A., 29 St Andrew Square
Smith, A. H., 5 St Andrew Square
Smith, G. P., 37 Gillespie Crescent
Smith, J., 89 Grassmarket
Smith, James, Torphin, Colinton
Smith, J. Turnbull, C.A., 29 St Andrew Square
Smith, Robt. G., Georgeville, Mid-Calder
Smith, R. M., 4 Bellevue Crescent
Sommerville, James, S.S.C., 23 South Blacket Place
Spowart, T., 7 Coates Crescent
STAIR, The Earl of, K.T.
Starforth, John, Architect, 37 York Place
Stavert, Archd., 18 Royal Terrace
Steel, Major Gavin, 17 Abercromby Place
Steell, Gourlay, R.S.A., 4 Palmerston Place
Stenhouse, James, South Gyle, Corstorphine
Stenhouse, Jas., Turnhouse, Cramond Bridge
Steuart, James, W.S., 8 Doune Terrace
Steuart, J., jun., Dalkeith Park, Dalkeith
Steuart, Sir Henry J. Seton, Bart., 9 Charlotte Square
Stevenson, Andrew, 37 Coates Gardens
Stevenson, David, 84 George Street
Stevenson, Thomas, Mount-Lothian, Penicuik
Stevenson, D., 85 Constitution Street, Leith
Stewart, Robert, of Ingliston, Ratho
Strathern, Robert, W.S., 12 South Charlotte Street
Stratton, David, 13 Middleby Street
Sutherland, Jas. B., S.S.C., 10 Windsor Street
Swan, James, 37 Lauriston Place
Swan, Thomas, 37 Lauriston Place
Syme, David, 1 George IV. Bridge
Syme, James, Millbank, Edinburgh
Syme, Jas. G., 33 Lauder Road, Grange
Tait, James, 26 Windsor Street
Tawse, John, W.S., 11 Royal Terrace
Tawse, John W., W.S., 49 Queen Street
Taylor, Thomas, Seed Merchant, Dalkeith
Tennant, Thomas, Walston, Penicuik
Thiem, Albert M., Windsor Hotel, Princes St.
Thirsk, E. S., Oil Mills, Musselburgh
Thoms, Geo. Hunter, 52 Great King Street
Thomson, Andrew, 15 Inverleith Place
Thomson, Charles W., C.A., 16 Lennox Street
Thomson, James, 73 George Street
Thomson, Lockhart, S.S.C., 114 George Street
Thomson, Mitchell, 12 Queen Street
Thomson, Peter, Conservative Club, Princes Street
Thomson, W., 5 Torphichen Street
Thomson, W. A., Oil Cake Mills, Leith
Thomson, W. T., 3 George Street
Thornton, James, Hermand, West Calder
Thornton, Thomas, Crofthead, Fauldhouse
Thyne, John, 21 Danube Street
Thyne, Wm., 4 Spring Gardens, Stockbridge
Tod, J. C., Gorgie Mains, Edinburgh
Tod, John W., W.S., 66 Queen Street
Todd, David, 18 St Patrick Square
Torrance, Archibald P., Kippielaw, Dalkeith
Torrance, T. A., Camps, Wilkieston
Torrance, W., Camps Lime Works, Wilkieston
Traill, Adam C., Bonnington Road, Leith
Traquair, Ramsay H., Colinton
Trotter, Coutts, 12 North Manor Place
Trotter, Lieut.-Colonel H , of Morton Hall
Trotter, Lieut.-Colonel R.A., of the Bush
Tuke, Dr J. B., Saughtonhall
Turnbull, David, W.S., 5 South Charlotte St.
Turnbull, John, W.S., 49 George Square
Turnbull, William, Goukshill, Gorebridge
Turner, Professor W., M.B., 6 Eton Terrace
Tytler, James Stuart, W.S., 36 Melville Street
Veitch, Chris., 24 Queen Street
Waddell, A. Peddie, 4 Great Stuart Street
Waddell, John, 34 St Andrew Square
Wakelin, John, Oil Mills, Musselburgh
Walcot, John, 13 Greenside Place
Walker, Alexander, Stagebank, Heriot
Walker, Alex. J., 3 Manor Place
Walker, Jas., of Dalry, Hanley, Corstorphine
Walker, W. C., yr. of Bowland
Walker, W. S., C.B., 125 George Street
Wallace, H. R. C., 21 Magdala Crescent
Walley, Thos., Principal, Veterinary College, Edinburgh
Wardrop, W. M., Williamfield, Portobello
WARRENDER, Sir G., of Lochend, Bart., Bruntsfield House
Watherston, James, 29 Queensferry Street

Watherston, Wm., 29 Queensferry Street
Watson, Adam, 23 Union Street
Watson, G. G., W.S., 45 Charlotte Square
Watson, George, of Norton, Ratho
Watson, James Graham, 45 Charlotte Square
Watson, James M., 2 Fingal Place
WAUCHOPE, Sir John Don, of Edmonstone, Bart.
Wauchope, J. D. D., yr. of Edmonstone
Welsh, Henry, 6 George Street
Welwood, Alan A. Maconochie, of Meadowbank
White, James, Stagehall, Stow
White, Robert, W.S., 23 Drummond Place
White, Robert, Outerston, Gorebridge
Whittet, George, Easter Drylaw, Davidson's Mains
Wight, George, 14 Duke Street
Wightman, James C. Seton, 7 Darnaway St.
Wightman, John Seton, 7 Darnaway Street
Will, Robert W., S.S.C., 37 Queen Street
Williams, W., Principal, New Veterinary College, Edinburgh
Williams, W. O., New Veterinary College, Edinburgh
Wilson, Dr Alex., Ivybank, Mid-Calder
Wilson, J., Professor of Agriculture, University
Wilson, John, of Alderston, Mid-Calder
Wilson, John J., Clydesdale Bank, Penicuik
Wilson, Richard, C.A., 28 Great King Street
Wishart, D. F., Catherine Street Court
Wishart, Edward, 1 York Road, Trinity
Wright David, Ravenswood, South Oswald Road, Edinburgh
Wylie, Alexander, W.S., 21 Castle Street
Wyse, G. B. M., 11 Northumberland Street
YOUNG, Hon. Lord
Young, Archibald, 22 Royal Circus
Young, John, Hailes Cottage, Slateford
Younger, Henry J., Abbey Brewery
Younger, Robert, 15 Carlton Terrace

ELGIN.

Anton, James, Seafield, Forres
Balmer, Thomas, Fochabers
Black, James, *Elgin Courant and Courier*, Elgin
Brodie of Brodie, Brodie Castle, Forres
Brown, William, Earlsmill, Forres
Brown, William, of Dunkinty, Elgin
Bruce, James, Burnside, Fochabers
Calder, John, Muirton, Elgin
Cameron, Alexander, of Mainhouse, Highfield, Elgin
Campbell, C. Macpherson, of Ballimore, Drumduan, Forres
Colvin, James E., Wester Manbeen, Elgin
Cooper, Alexander, Solicitor, Elgin
Creyk, Dr A., Dalvey, Advie, Strathspey
Cruickshank, David, Meft, Elgin
Cruickshank, John, Elgin
Cruickshank, John, Dandaleith, Craigellachie
CUMMING, Sir Wm. G. Gordon, of Altyre, Bart., Forres
Dawson, William, Westerton, Fochabers
Douglas, John, Marionburgh, Ballindalloch
DUNBAR, Sir Arch. of Northfield, Bart.
Esson, Robert, Ballindalloch
Ferguson, John, Lossiemouth
Forsyth, David, Town Clerk, Elgin
Garden, Archibald, Grange Green, Forres
Gatherer, George, Solicitor, Elgin
Gordon, George, Land Surveyor, Elgin
Grant, George, Glenfarclass, Ballindalloch
GRANT, Lieut.-Col. the Hon. James Ogilvie, of Grant, Mayne House, Elgin
GRANT, Sir George Macpherson, of Ballindalloch, Bart., M.P.
Grant, John, Inverlaidnan, Carr Bridge
Grant, John, 57 So. Guildry Street, Elgin
Grant, William, Wester Alves, Forres
Haddon, P. M., St Mary's, Orton, Fochabers
Harris, Richard H., Earnhill, Forres
Hunter, John, Dipple, Fochabers
Lawrence, James, Forres Mills, Forres
Lawson, Alexander, Brae Lossie, Elgin
Leitch, A. K., Inchstelly, Forres
M'Bean, D., Auchterblair, Carr Bridge
Macdonald, William, Banker, Elgin
Mackay, H. M. S., Banker, Elgin
Mackay, R. J., Burgie Lodge, Forres
Mackenzie, F. C., Forres
Mackessack, Charles, Cloves, Elgin
Mackessack, George, yr. of Ardgye and Roseisle, Forres
Mackessack, James, Earnside, Forres
Mackessack, John, Balnaferry, Forres
Mackessack, John, Kinloss, Forres
Mackessack, P. H., Westerfolds, Elgin
Mackessack, Robert, of Ardgye and Roseisle, Forres
Mackessack, R. H., Newton of Struthers, Forres
Macpherson, George G., Brodie Cottage, Forres
M'William, James, Stoneytown, Boharm
Mann, Alexander, Ballintomb, Grantown
Morrison, Alexander, Nurseryman, Elgin
Peterkin, James Grant, of Grange, Forres
Petrie, William, Kirkhill, Elgin
Petrie, W. A., Rosebrae, Elgin
Ray, William, Sunbank, Elgin
Reid, Alexander, Architect, Elgin
RICHMOND and GORDON, The Duke of, K.G.
Robertson, Wm. A., Abbotshill, Forres
Ross, Dr James, Linksfield, Elgin
Scott, Robert, Easter Manbeen, Elgin
SEAFIELD, The Earl of
Sime, John, Blervie, Forres
Smith, John, Cragganmore, Ballindalloch
Smith, John, Inverallan House, Grantown
Smith, J. Gordon, Minmore, Ballindalloch
Stewart, John, Manager Home Farm, Ballindalloch
Sutherland, Eric, Linkwood, Elgin
Sutor, James, The Collie, Fochabers
Tait, George, V.S., Elgin
Tait, George, jun., V.S., Elgin
THURLOW, Lord, Dunphail
Tulloch, John, Midmains, Duffus, Elgin
Urquhart, Robert, jun., Forres
Walker, Robert, Altyre, Forres
Walker, William, Kintrae, Elgin
Watt, James, Garbity, Orton, Fochabers
Wight, Alexander, Ironmonger, Forres
Williamson, George, Shempston, Elgin
Yool, Thos., Caldcoats, Elgin
Young, James, Waterton, Elgin

FIFE.

Aitken, George, Tyrie, Kirkcaldy
Aitken, George Lewis, Boglilly, Kirkcaldy
Alexander, J., of Balmule, Dumfermline
Anderson, Charles, Fettykil, Leslie
Anderson, David, Cassendilly, Cupar Fife
Anderson, W. H., Clifton Villa, Anstruther
Andrews, John, Melville, Ladybank
Annan, David, The Torr, Moonzie, Cupar Fife
ANSTRUTHER, Sir Robert, of Balcaskie, Bart.
Archibald, T. B., Nisbetfield, Ladybank
Arnot, David, Friarton, Newport, Fife
Aytoun, R. S., of Inchdairnie, Kirkcaldy
Baird, William, of Elie, Fife
Balfour, Douglas, Letham, Leven
Balfour, Major F. W. of Fernie Castle, Cupar Fife

Balfour, John, of Balbirnie, Markinch
Ballingal, Neil, Sweetbank, Markinch
Ballingal, Wm., Sweetbank, Markinch
Ballingall, John, Dunbog, Newburgh
Barclay, Robert, Drums, Falkland
Beath, David, Auchmuir, Leslie
Bell, David, Todhall, Cupar Fife
Bell, Dr James M., Kingskettle
Bell, John, Stenton, St Monance
Bell, T., Craigkennochy Terrace, Burntisland
Bennet, Arthur, Bogside, Cardenden
Berwick, David, Collairnie, Newburgh
Bethune, Admiral, of Balfour, C.B., Markinch
Bethune, Alex., of Blebo, Cupar Fife
Bethune, Colonel R., of Nydie, St Andrews
Beveridge, David, Buckthorns, Largo
Beveridge, George, Kirkcaldy
Beveridge, Jas., Crombie, Dunfermline
Beveridge, William, of Bonnyton, Dunfermline
Beveridge, William, Kirkcaldy
Bird, Ebenezer, Glenduckie, Newburgh
Bisset, Alex., Balfarg, Markinch
Blyth, James, Leckiebank, Auchtermuchty
Bonthrone, A., Newton of Falkland, Falkland
Bowman, James, Newark, St Monance
Brown, George, of Westfield, Cupar Fife
Brown, James, St Andrews
Brown, James W., Balmullo, Leuchars
Brown, John, of Colton, Dunfermline
Bruce, A. H. T., of Falkland, Ladybank
BRUCE, Hon. R. P., M.P., Broomhall, Dunfermline
Bruce, T., of Arnot, Kingsdale, Kennoway
Cairns, John, Parkhill House, Newburgh
Cant, James, Orr Bridge, Kirkcaldy
CARNEGIE, Hon. Charles, St Andrews
Carnegie, James, of Aytoun Hill, Newburgh
Carswell, David, of Rathillet, Straiton, Leuchars
Cartwright, T. R. B. Leslie Melville, Ladybank
Cathcart, R., of Pitcairlie, Auchtermuchty
Cheape, G. C., of Strathtyrum, Strathmiglo
Cheape, J., yr. of Lathockar, St Andrews
Christie, F. W., Dairsie Mains, Cupar Fife
Christie, P., Mains of Scotscraig, Tayport
Clark, William, Bonnygate, Cupar Fife
Cleghorn, Dr, of Stravithy, St Andrews
Constable, James, of Glencraig, Lochgelly
Coventry William, Pleasance, Aberdour
Craig, W., Urquhart, Dunfermline
Crawford, R., Balbougie, Inverkeithing
Cunningham, David, Burntisland
Cunningham, John, Burntisland
Curror, David, of Wester Craigduckie
Curror, Peter, Maltster, Kirkcaldy
Dalgleish, L., of Pitfirrane
Davidson, George, Banchory, Kinghorn
Dingwall, William, Ramornie, Ladybank
Don, Alex., Keirsbeath, Dunfermline
Dougall, Admiral Maitland, R.N., of Scotscraig
Downie, George, Balcomie, Crail
Drummond, J., jun., Blacklaw, Dunfermline
Dryburgh, J., Kininmonth, Cupar Fife
Drysdale, Wm., of Kilrie, Kinghorn
Duncan, Alex., Craigfoodie, Cupar Fife
Duncan, John, of Dullatur, Newbigging
Duncan, John, yr. of Kinkell, St Andrews
Duncan, John W., Boghall, Kingsbarns,
Duncan, Robert, of Kirkmay, Crail
Elder, Hugh, Dunfermline
ELGIN and KINCARDINE, The Earl of
ERSKINE, Sir Thomas, of Cambo, Bart.
Ferguson, R. C., Munro, of Raith
Fernie, J. C., Union Club, St Andrews
Finlay, John, Lochend, Lochgelly
Flockhart, J., Banker, Colinsburgh
Forgan, James, Sunnybraes, Leven
Fortune, George, Barnsmuir, Crail
Fortune, W. R., of Muircambus, Colinsburgh
FOULIS, Sir James Liston, of Colinton, Bart., St Andrews
Foulis, Dr R., of Cairney Lodge, Cupar Fife
Fyfe, Robert, Pitconochie, Dunfermline
Fyshe, Jas., jun., Easter Balbeggie, Kirkcaldy
Gilchrist, Andrew, Carvennom, Anstruther
Gillespie, Alex., Balmeadowside, Cupar
Gillespie, D., of Mountquhannie, Cupar Fife
Gilmour, John, Montraive, Kennoway
GLASGOW, The Earl of
Grieve, James, Langlees, Torryburn
Haig, H. V., Cameron House, Windygates
Hain, Thomas, Cuplahills, Leuchars, Fife
Heggie, H., Mains of Beath, Crossgates
Heggie, R. B., West End House, Kirkcaldy
Henderson, Adam, Grange, Dunfermline
Hepburn, John, Kinghorn
Herdman, B. A., Falkland Wood, Falkland
Hill, A., of Stonywynd, St Andrews
Hill, David, Upper Magus, St Andrews
Hill, John, Langside, Kennoway
Hogarth, George, Banker, Cupar Fife
Hunt, J. A., of Pittencrieff, Dunfermline
Hutchison, Alex., Ingleside, Kirkcaldy
Hutchison, Robt., Braehead, Kirkcaldy
Inglis, George, Dron, Cupar Fife
Ireland, David S., of Denork, St Andrews
Irvine, Walter, Grangemuir, Pittenweem
Jamieson, W. T., Solicitor, Anstruther
Jeffrey, John, of Balsusney, Largo
Johnston, Dr, Fincraigs, Newport
Johnston, S. W., Fincraigs, Newport
Johnstone, W. M., Banker, Cupar Fife
Kininmouth, Peter, Milton, Leuchars
Knight, Robert, jun., V.S., Dunfermline
Laing, Lohn, Newburgh, Fife
Landale, And., Woodmill, Auchtermuchty
Landale, John, of Woodbank, Dunfermline
Lauder, Dewar, St Nicholas, St Andrews
Lawrie, John, Kirklandhill, Leven
Lawson, Alex., of Burnturk, Kettle
Lawson, Thomas, of Carriston, Markinch
LESLIE, Hon. G. Waldegrave, Leslie House, Leslie
Lindesay, W. F., Balmungo, St Andrews
Lyell, John, Newburgh
Macdonald, Alex., of Edenwood
M'Farlane, James, Dunfermline
M'Intosh, Dr, University, St Andrews
M'Leod, John N., Banker, Kirkcaldy
Marshall, Walter, of Lochmaloney, Cupar Fife
Martin, Jas., Priestfield, Pitlessie, Ladybank
Matheson, Kenneth, Dunfermline
Meldrum, D. B., of Kincaple, St Andrews
Meldrum, J., of Eden Bank, Pittormie, Cupar Fife
Melville, J. Whyte, of Bennochy, Mount Melville, St Andrews
Menzies, Fergus, Blackhall, Dunfermline
Millar, J., of Waulkmill, Dunfermline
Millie, George, Kilmaron, Cupar Fife
Mitchell, John, Fliskmiln, Cupar Fife
Mitchell, John, Knockhouse, Dunfermline
Mitchell, Robert, 3 Bonnygate, Cupar Fife
Morrison, B. G. W., of Falfield, Cupar Fife
Morton, J., Lambieletham, St Andrews
Muckersie, Henry, Drumfin, Dunfermline
Muirhead, T., Townhill Store, Dunfermline
Nisbet, Ralph P., 4 Dempster Terrace St Andrews
Normand, William J., Dysart
OCHTERLONY, Sir C. M., Bart., St Andrews
Oliphant, T. T., Queen Mary's, St Andrews
Oswald, J. T., of Dunnikier, Kirkcaldy
Osborne, David, Banker, Cupar Fife
Paton, John, Kirkness, Lochgelly
Pitblado, C. B., Charlestown, Dunfermline

Pitcairn, John, 9 Abbotsford Crescent, St Andrews
Prentice, G., of Strathore, Newbigging, Burntisland
Prentice, R. R., Skeddoway, Kirkcaldy
Purvis, John, of Kinaldy, St Andrews
Reekie, A., Walton, Auchtertool, Kirkcaldy
Reid, John, of Dunduff, Dunfermline
Rigg, James Home, of Tarvit, Cupar Fife
Rignall, James, Cupar Fife
Rintoul, D., Mains of Blebo, Cupar Fife
Rintoul, Robert, of Lahill, Largo
Ritchie, David, of Kilmux, Kennoway
Roberts, J., Greenhead of Arnot, Leslie
Robertson, Donald, of Mayfield, Cupar Fife
Robertson, J., Denbrae, Cupar Fife
Rodgie, Henry, Aithernie, Leven
Rolland, Adam, of Gask, Dunfermline
ROSSLYN, The Earl of
Russell, A. W., of Kenlygreen, St Andrews
Russell, Arthur, Royal Bank, Cupar Fife
Russell, David, Silverburn, Leven
Russell, George, Hatton, Largo
Russell, James, Parbroath, Cupar Fife
Scott, John, Hillhead, St Andrews
Sime, Alex., Dumbarnie, Largo, Fife
Simpson, John, Burntisland
Small, James, Banker, Kirkcaldy
Small, L., of Foodie, Cupar
Smith, James T., Duloch, Inverkeithing
Smith, Wm., Bridgend, Ceres, Fife
Spears, W. R., Writer, Kirkcaldy
Spowart, T., of Broomhead, Dunfermline
Stark, Robert, Kirkcaldy
Stenhouse, J. S., of Northfod, Dunfermline
Stevenson, John, Lillyhill Ho., Dunfermline
Swan, P. D., Provost of Kirkcaldy
Syme, William, Craigie, Leuchars, Fife
Thom, James, Leden Urquhart, Strathmiglo
Thom, James F., Wellsgreen, East Wemyss
Thom, R. D., Pitlochie, Strathmiglo
Thomas, Jas., Forthar, Ladybank
Thomson, John A., of Charleton, Colinsburgh
Tod, George, Cairneyhill, Dunfermline
Tod, James, Easter Cash, Strathmiglo
Troup, Alexander, Strathmiglo
Tulloch, James, Dales, Inverkeithing
Turnbull, James, St Colme House, Aberdour
Veitch, Walter, Grange, Kinghorn
Walker, Archd., Banker, Auchtermuchty
Walker, Thos., Demperston, Auchtermuchty
Walker, Thomas R., Cupar Fife
Walker, W., South Quarter, Kingsbarns
Wallace, George, Banker, Cupar Fife
Wallace, James, Brake, St Andrews
Wallace, R. A., Rhynd, Dunfermline
Wallace, T. A., Banker, Burntisland
Wallace, William, Kinnear, Kilmany, Cupar Fife
Wallace, William, of Newton of Collessie, Ladybank
Watt, Alex., Balbarton, Kirkcaldy
Watt, George, Kilmany, Cupar Fife
Watt, James, Pitdinnie, Cairniehill, Dunfermline
Watt, W., Seed Merchant, Cupar Fife
Wedderburn, H. S., of Wedderburn, Birkhill, Cupar Fife
Welwood, Alan A. Maconochie, of Garvoch
Wemyss, D. W., Newton Bank, St Andrews
Wemyss, R. G. E., of Wemyss, Kirkcaldy
Whyte, John, Lundin Mill, Largo
Wilkie, George, Cowdenlaws, Dysart
Wilson, George, Gladstone Cottage, Cupar Fife
Wilson, P., Seed Crusher, Burntisland
Wilson, Robert M., Fod Bank House, Dunfermline
Wood, Major William, Falkland
Wyatt, S., Nydie Mains, St Andrews
Young, A., Lochtyside, Thornton, Kirkcaldy
Young, Robert W., of Colinswell
Younger, J. B. B. C., Bankhead, Leven

FORFAR—Eastern Division.

Alexander, John, Broughty Ferry
Anderson, Jas., Hill Street, Broughty Ferry
Arkley, R. H., Dun House, Montrose
Bathie, Wm., Auctioneer, Arbroath
Bell, James, Gilchorn, Arbroath
Bell, John B., Cauldcoats, Arbroath
Bowie, Alex., Mains of Kelly, Arbroath
Bowie, John P., Mains of Kelly, Arbroath
Buyers, J., jun., Easter Brakie, Friockham
Campbell, J. A., of Stracathro, M.P., Brechin
Carnegie, H. L., of Kinblethmont, Arbroath
Carnegie, W., of Dunlappie, Brechin
Chaplin, G. C. Child, of Colliston, Arbroath
Chaplin, G. Robertson, of Murlingden, Brechin
Collier, John, Hatton House, Carnoustie
Colquhoun, Dug., Vitriol Works, Carnoustie
Coupar, John, Balrownie, Brechin
Cowe, George, Balhousie, Carnoustie
DALHOUSIE, The Earl of
Dickson, James A., Woodville, Arbroath
Dickson, J. F., Panbride House, Carnoustie
Dowall, J. P., Kelly Bleachfield, Arbroath
Duncan, D. H., Friock Mains, Arbroath
Duncan, Jas., Panlathie Mill, Carnoustie
Erskine, J. E., of Linlathen, Broughty Ferry
Falconar, D., Milton of Conon, Arbroath
Forgan, And., Barnhill, Broughty Ferry
Fraser, Pat. A., of Hospitalfield, Arbroath
Grant, Capt. Forsyth, of Ecclesgreig, Montrose
Guthrie, C. M. L., yr. of Carnoustie
Hood, D. M., Gedhall, Barry, Carnoustie
Hume, David, Barrelwell, Brechin
Hume, John, Balmirmer, Arbroath
Jamieson, D., Auchmithie Mains, Arbroath
Kennedy, H. H., Rossie Castle, Montrose
Laird, Geo. W., of Denfield, Arbroath
Lyall, Chas., Old Montrose, Montrose
Lyall, David, of Gallery, Montrose
M'Corquodale, David, Banker, Carnoustie
Milne, John, Corn Merchant, Montrose
Mitchell, James, Merchant, Montrose
Mitchell, Wm., Merchant, Montrose
Mitchell, W., Auchlochie, Fearn, Brechin
Morgan, D., South Mains of Ethie, Arbroath
Mustard, Alex., Leuchland, Brechin
Myers, Geo. C., Town-Clerk, Montrose
OCHTERLONY, Sir C. M., of Ochterlony, Bart.
Ogilvie, David, Berryfauld, West Kirkton Arbroath
Ogilvie, David, jun., Nether Kelly, Arbroath
Porteous, D. S., of Lauriston, Montrose
Rennie, James, Ironshill, Inverkeillor
Robertson, D. S., Cookston Park, Brechin
Robertson, James, Panmure, Carnoustie
Rodger, Robt., jun., Mains of Dun, Montrose
Salmond, James, Cairnie, Arbroath
Scott, D. G. C., Maisondieu, Brechin
Scott, Ronald, Renmure, Arbroath
Semple, J., Haughs of Kinnaird, Brechin
Smith, Wm., West Drums, Brechin
SOUTHESK, The Earl of, K.T.
Stansfeld, Capt. John, Dunninald, Montrose
Swan, James, Inverpeffer, Carnoustie
Swan, W., Balhargie, Monifeith
Taylor, John, Redcastle, Arbroath
Tennant, James, Carnoustie
Thomson, Alex. M., Secretary Angus Agricultural Society, Arbroath
Vallentine, George, Brechin
Wood, Chris., Kintrochat House, Brechin

FORFAR—Western Division.

Adams, James, M.D., Oathlaw, Forfar
AIRLIE, The Earl of
Alexander, John, Ballindarg, Kirriemuir
Anderson, Alexander, Berryhill, Dundee
Anderson, R. W., Clerk of Supply, Forfar
Arklay, Robert, of Ethiebeaton, Dundee
Arnot, Wm., Glamis Mains, Glamis
Bell, Alex., Kirkton of Tealing, Dundee
Bell, G., Barns of Claverhouse, Dundee
Bell, Thomas, Ballinshoe, Kirriemuir
Bell, Wm., Muirloch, Fowlis Easter, Lochee
Black, John, Cortachy, Kirriemuir
Blyth, A. H., Corston, Coupar-Angus
Brodie, J. C., of Idvies
Bruce, Andrew, Jordanston, Meigle
Burr, Rev. P. Lorimer, Lundie Manse, Dundee
Buttar, David, Corston, Coupar-Angus
Buttar, Thomas A., Corston, Coupar-Angus
Cameron, James, Murthill Farina Works, Forfar
CAMPERDOWN, The Earl of
Carnegie, W., yr. of Dunlappie, Coul, Forfar
Carver, John, Kinloch, Meigle
Cowpar, James, Over Migvie, Kirriemuir
Cox, Geo. M., Beechwood, Dundee
Dalgleish, W. Ogilvy, of Mayfield, Dundee
Drummond, Thomas, of Craigie, Dundee
Duke, Wm., Newbarns, Kirriemuir
Duncan, Pat. G., East Memus, Kirriemuir
Duncan, W. G., Balkemback, Tealing, Dundee
Easson, David, Camperdown, Dundee
Forrest, James, jun., Kirriemuir
Fyfe, Wm., Forfar
Gardyne, Col. C. G., of Finavon, Forfar
Geekie, Alex., of Baldowrie, Coupar-Angus
Graham, D. M., Auctioneer, Forfar
Gray, C W., of Carse Gray, Forfar
Guild, Thomas, Herdhill, Kirriemuir
Hannan, J, D., Tayport Estates Office, Dundee
Hardie, James, 73 Nethergate, Dundee
Harris, Wm., Innkeeper, Alyth
Henderson, G. D. C., Com. R.N., of Invergowrie, Dundee
Henderson, W., Milltown, Coupar-Angus
Hill, James, Braideston, Meigle
Kinloch, Sir John G. S., of Kinloch, Bart.
Kinloch, Col. John Grant, of Kilrie, Logie, Kirriemuir
L'Amy, J. R., of Dunkenny
Lawson, Alexander, Merchant, Dundee
Lawson, Thomas, Sandyford, Kirriemuir
Lowson, Wm., Gray Bank, Dundee
M'Gavin, Robert, of Ballumbie, Dundee
Menzies, R. S., of Pitcur, Hallyburton House, Coupar-Angus
Miller, O. G., of Pittendriech, Dundee
Nickels, J. T., Corston, Coupar-Angus
Nicoll, T. Munro, Littleton, Kirriemuir
Ogilvy, Donald, of Clova, Kirriemuir
OGILVY, Sir John, of Inverquharity, Bart.
Ogilvy, John, of Inshewan
Ogilvy, John, Harecraig, Dundee
Pattullo, P., Eassie Meigle
Powrie, James, of Reswallie, Forfar
Primerose, A. G., Dock Street, Dundee
Ralston, Andrew, Glamis, Forfar
Reid, James, Kilmundy, Glamis
Ritchie, R. B., Accountant, Dundee
Robertson, John, Ballaty, Glenisla
Rogers, James S., Rose Mill, Dundee
Rogers, Wm., Ph.D., Rose Mill, Dundee
Ross, Wm., North Drumgley, Forfar
Scott, Robert, Turin Mains, Forfar
Small, David, Writer, Dundee
Smith, Thomas Powrie, Dundee
Soutar, John, West Hall, Murroes, Dundee
Stewart, John, Land Steward, Glamis
STRATHMORE, The Earl of
Thoms, G. H., of Aberlemno
Toplis, Robert, Glamis Hotel, Glamis
Torry, Adam Ogilvie, Forfar
Turnbull, George, Baldoukie, Tannadice
Watson, Wm., Ochterlony Mains, Forfar
Wedderspoon, George, Balgavies, Forfar
Whitton, And., Couston, Newtyle
Whyte, Archd., jun., Sidlaw House, Newtyle
Whyte, John, West Dunoon, Meigle
Whyte, William, Spott, Kirriemuir
Wilkie, D., of Auchlishie, Kirriemuir
Wilkie, James, Solicitor, Kirriemuir
Wilson, T. Mackay, Solicitor, Kirriemuir

HADDINGTON.

Ainslie, R., of Elvingston, Gladsmuir
Aitken, Mark, Traprain, Prestonkirk
Anderson, Colonel, of Bourhouse, Dunbar
Anderson, G. B., Meikle Pinkerton, Dunbar
Andrew, H., Lennoxlove, Acredales, Haddington
BAIRD, Sir David, of Newbyth, Bart.
Balfour, A. J., of Whittinghame, M.P., Prestonkirk
Bathgate, James, Ormiston, Tranent
Belfrage, A. J., Cairndinnes, Haddington
Belfrage, James, Samuelston, East Mains Haddington
Black, John, Setonhill, Longniddry
Brand, James, Dunbar
Bridges, Andrew, Engineer, North Berwick
Broadwood, T., of Fulfordlees, Crowhill, Dunbar
Brodie, James C., Thorntonloch, Dunbar
Brown, J., Murrays, Ormiston, Tranent
Burns, And., Harelaw, Longniddry
Campbell, Geo., Rhodes, North Berwick
Christie, Charles J. Westbank, Tranent
Christie, James M., Sunnyside, Prestonkirk
Christie, John, West Mains, Haddington
Clapperton, Jas., Garvald Mains, Prestonkirk
Clapperton, John, Gifford
Clark, James, Kirklandhill, Dunbar
Crichton, W., Live Stock Agent, Haddington
DALRYMPLE, Sir Hew, of North Berwick Bart.
Davidson, H. M., Sheriff-Clerk, Haddington
Dempster, G., Ormiston Hall, Tranent
DENMAN, Lord
Dodds, Samuel, Somnerfield, Haddington
Drysdale, Henry, Begbie, Haddington
Dudgeon, James, Upper Keith
Durie, R. Hogg, Barney Mains, Haddington
Elder, Hugh, East Bearford, Haddington
Ewart, H., Tyninghame, Prestonkirk
Fletcher, J., of Salton, Tranent
Ford, Wm., Fenton Barns, Drem
Forman, John, Duncrahill
Fyshe, Peter, Wamphray, North Berwick
Gaukroger, G., Southfield, Longniddry
Gray, William, Brownrigg, North Berwick
Gray, W. W., of Nunraw, Haddington
Greenshields, T. A., Windymains, Upper Keith
Guild, Jas., Balgone Barns, North Berwick
Guild, James Lyon, Abbey, North Berwick
HADDINGTON, The Earl of
Haig, Archd. R., Quarryford, Gifford
Hall, Sir Basil F., of Dunglass, Bart.
Halliday, T., Rosehall Foundry, Haddington
Handyside, J. B., Fenton, Drem
Harper, Joseph, Snawdon, Gifford
Harvey, G., Whittinghame Mains, Prestonkirk
Hay, Captain J. G. Baird, of Belton, Dunbar
Henderson, Alex., Longniddry
Henderson, John, Byres, Haddington

Henderson, John, Longniddry
Hepburn, J., Preston Mains, Prestonkirk
Hepburn, Jn., Seedsman, Dunbar
HEPBURN, Sir T. B., of Smeaton, Bart
Higgins, Robt., Ninewar, Prestonkirk
Hislop, Wm., Goatfield, Haddington
Hope, Alex. P., Oxwell Mains, Dunbar
Hope, Henry W., of Luffness, Drem
Hope, James, East Barns, Dunbar
Hope, William James, East Barns, Dunbar
Houstoun, Capt., of Clerkington, Haddington
Houstoun, M. H., of Beechhill, Haddington
Hume, P. H., Dunbar
Hunter, Wm. B., North Berwick
Innes, T. S. Mitchell, of Phantassie, Prestonkirk
Johnston, Alex., North Mains, Ormiston
Kerr, John, Ferrygate, North Berwick
KINLOCH, Sir Alexander, of Gilmerton, Bart., Drem
Laidlay, J. W., of Seacliff, North Berwick
Laidlay, R. W., Halls, Dunbar
Lawrie, Jas. D., of Monkrigg, Haddington
Lennie, John, Long Newton, Gifford
M'Culloch, D., Bank-Agent, North Berwick
Macdonald, W. S., Craigielaw, Longniddry
M'Ewen, J., Redside Farm, North Berwick
Marjoribanks, John, Camptoun, Drem
Maxwell, Francis, Balgone, North Berwick
Melvin, Chas., Penston, Tranent
Morrison, And., Broomrig, Pencaitland
Muirhead, F., Eaglescarnie Mains, Haddington
Murray, Alex., Alderston, Haddington
Nelson, Charles, Skateraw, Dunbar
Newton, Capt. Hay, of Newton, Haddington
Park, Thomas B., Springfield, Haddington
POLWARTH, Lord
Punton, F. H., West Fortune, Drem
Ranken, John, Aberlady, Longniddry
Richardson, John, Writer, Haddington
Richardson, J., Southfield, Haddington
Riddell, Thomas, Athelstaneford, Drem
Riddell, Wm., Hailes, Haddington
Rintoul, Charles, Kingston, North Berwick
Ritchie, W., Spott, Dunbar
Robertson, James F., New Mains, North Berwick
Robertson, Robt., West Barns, Dunbar
Russell, James M., Greendykes, Tranent
Scott, C., Newtonlees, Dunbar
Sharp, John J., Leaston, Upper Keith
Shirriff, David, Muirton, Drem
Shirriff, Samuel D., North Berwick
Simpson, Thos., West Byres, Ormiston
Skirving, Jas., Luffness Mains, Drem
Smith, Adam, Stevenson Mains, Haddington
Smith, Andrew, Castle Mains, Gifford
Smith, Chas., Whittinghame, Prestonkirk
Smith, D. W. E., North Elphinstone, Tranent
Smith, E. Hedley, Whittinghame, Prestonkirk
Smith, William, Greenhead, Salton
Stein, John, Broomhouse, Dunbar
Stodart, William, Wintonhill, Tranent
Stuart, A. C., of Eaglescarnie, Haddington
Swinton, P. Burn, Holyn Bank, Gifford
Sydserff, T. Buchan, of Ruchlaw, Prestonkirk
Taylor, J. B., Seton West Mains, Prestonpans
Turnbull, P., Little Pinkerton, Dunbar
Turnbull, Walter, Tynemont, Ormiston
TWEEDDALE, The Marquis of
Tweedie, Alexander, Coats, Haddington
Tweedie, James, Tyninghame, Prestonkirk
Wallace, John, Hailes, Haddington
Welsh, Alex., Waughton, Prestonkirk
WEMYSS and MARCH, The Earl of
Wilson, William, Wolfstar, Tranent
Wyllie, Alexander, Bolton, Haddington
Wyllie, James, Innerwick, Dunbar
Young, D. S., Bonnington, North Berwick
Yule, Edward, Balgone, North Berwick

INVERNESS.

ABINGER, Lord
Alison, James M., Beauly
Allan, William, Clury, Grantown
Anderson, James, Solicitor, Inverness
Baillie, Evan, of Dochfour, Inverness
Baillie, James E. B., yr. of Dochfour, Inverness
Baillie, John B., of Leys, Inverness
Baird, John, of Knoydart
Baxter, Frederick, Seedsman, Inverness
Bethune, Angus, Seafield, Inverness
Biscoe, T. Ramsay, of Newton, Inverness
Birnie, Alex., Wellhouse, Beauly
Black, George, Banker, Inverness
Blair, Patrick, Sheriff-Substitute, Inverness
Bower, A. L., Strathaird House, Broadford
Brougham, Dr Jas. P., Culduthel House, Inverness
Cameron, Donald, Inversanda, Fort-William
Cameron, Donald, of Lochiel, M.P.
Cameron, D. C., Tallisker, Broadford
Cameron, Hugh Ewen, Clunes, Fort-William
Carruthers, Robert, *Courier* Office, Inverness
Chisholm, The, Erchless Castle, Inverness
Chisholm, Duncan, Craskie, Cannich, Beauly
Chisholm, John, Aucthteraive, Fort-Augustus
Chisholm, John, Ironmonger, 8 Church Street, Inverness
Cran, John, Kirkton, Inverness
Cumming, James, Allanfearn, Inverness
Davidson, Donald, Drummond Park, Inverness
Davidson, Hugh, of Cantray, Fort-George Station
Davidson, Robert, 29 Academy St., Inverness
Davidson, Samuel, Guisachan, Beauly
Dougall, Andrew, Railway Manager, Inverness
Duff, George Smyttan, Heatherley, Inverness
DUNMORE, The Earl of
Eden, Right Rev. Bishop, Primus, Eden Court, Inverness
Elliot, Matthew, Flesher, Inverness
Ferguson, John, Bornish, South Uist
Forbes, Duncan, of Culloden, Inverness
Forsyth, Wm. B., *Inverness Advertiser*, Inverness
Fraser, Alex., Commercial Bank, Provost of Inverness
Fraser, Alex., Solicitor, Inverness
FRASER, Col. the Hon. A. E., Eilan Aigeas, Beauly
Fraser, A. T. F., of Abertarff, Inverness
Fraser, David, Dalneigh, Inverness
Fraser, Evan Baillie, Redburn, Inverness
Fraser, Hugh, Balloch of Culloden, Inverness
Fraser, Huntly, Kinmylies, Inverness
Fraser, James, C.E., Inverness
Fraser, James, Mauld, Beauly
Fraser, Captain John, of Balnain
Fraser, William, Annfield, Inverness
Grant, Charles, Hazelbrae, Glen Urquhart
GRANT, Sir George Macpherson, of Ballindalloch, Bart., M.P.
Grant, Major Wm., Drumbuie, Glen Urquhart
Grant, Wm. R., Solicitor, Inverness
Gregory, A. A., Corn Merchant, Inverness
Harrison, James M., Coachbuilder, Inverness
Hay, Alex. Penrose, Riverdale, Inverness
Henderson, Peter, Factor's Office, Beauly
Hendrie, John, Builder, Inverness
Howden, John, Inverness
Hugonin, R., Kinmylies House, Inverness
Inglis, Lieut.-Col. Hugh, of Kingsmills

Innes, Charles, Solicitor, Inverness
Kennedy, John, Kinchillie, Roy Bridge, Kingussie
Lawrie, William, Architect, Inverness
Lawson, Wm., Platchaig, Beauly
LOVAT, Lord
Macandrew, Henry C., The Castle, Inverness
Macdonald, Alex., Wine Merchant, Inverness
Macdonald, Alex., Balranald, Lochmaddy
Macdonald, A. R., Ord
Macdonald, Allan, Solicitor, Inverness
Macdonald, Andrew, Charleston, Inverness
Macdonald, D. P., Invernevis, Fort-William
Macdonald, Donald, Tormore, Broadford
Macdonald, James, Vallay, North Uist, Lochmaddy
Macdonald, John, Newton, Lochmaddy
Macdonald-Robertson, W. D. A., of Kinlochmoidart
Macdonell, E. R., of Morar, Fort-William
Macdonell, R. T., Morar, Fort-William
MacEwen, John C., Inverness
Macfarlane, Alex., Caledonian Hotel, Inverness
M'Gillivray, Allan, Gordon Hall, Kingussie
MacGillivray, Dr D. W., Eoligary, Barra
MacGillivray, William, Eoligary, Barra
MacGillivray, Finlay, Solicitor, Inverness
MacGillivray, M. N., Eoligary, Barra
M'Gillivray, John, Ballachroan, Kingussie
MacGregor, R., of Brae Rannoch, Kincraig, Kingussie
MacGregor, Thomas, Kingsmills Road, Inverness
Mackay, George Grant, of Glengloy, Kingussie
Mackay, Thomas, Easter Moy, Arcan, Beauly
Mackenzie, Allan R., yr. of Kintail, Muirton House, Inverness
Mackenzie, Alex., Silverwells, Inverness
Mackenzie, Alex., Tomich, Beauly
Mackenzie, Donald, Glenloy, Fort-William
Mackenzie, N. B., British Linen Bank, Fort-William
Mackenzie, Thomas, of Ord, Beauly
Mackessack, Charles, Culblair, Fort-George Station
Mackintosh, A. D., of Mackintosh, Moy Hall, Inverness
Mackintosh, C. Fraser, of Drummond, M.P., Inverness
Mackintosh, Æneas, of Balnespick, Inverness
Mackintosh, Æneas W., of Raigmore, Inverness
Mackintosh, A., of Holme, Inverness
Mackintosh, John, South Kinrara, Aviemore
Maclean, Charles, Milton, South Uist
M'Leish, Daniel, Bank of Scotland, Fort-William
Macleod, Norman, of Macleod
Macleod, W. A., Hawthorn Cottage, Portree
Macleod, Captain, of Orbost, Skye
M'Millan, E. H., Caledonian Bank, Inverness
Macpherson, C. J. B., of Belleville, Kingussie
Macpherson, Donald, Glen Nevis, Fort-William
Macpherson, Duncan, Kingussie
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Munro, John, Seedsman, Inverness
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Rose, James, Mains of Connage, Fort-George Station
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Shaw, Duncan, W.S., Inverness
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Brown, Joseph, Sootywells, Fordoun
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Field, Rev. Edward Burch, of Moreland
Horn, John, of Thomanean, Milnathort
Kirkland, Major-General, of Wester Fordel, Milnathort
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Robertson, Lieut.-Col. James C., Whitefield, Govan
Robertson, J., 68 Bath Street, Glasgow
Rodger, Robert M., Royal Bank, Airdrie
Rodger, Hugh, Townhead, Motherwell
Ronaldson, Alex., Glasgow
Russell, A., Wishaw House, Lanarkshire
Russell, George, Carnwath
Russell, James, National Bank, Airdrie
Russell, James, Allanton, Hamilton
Rutherford, Dr J., Woodilee Asylum, Lenzie
Salmond, David S., St Enoch Square, Glasgow
Sanderson, James, Dykefoot, Carnwath
Scott, James, Bogton, Bishopsbriggs
Scott, James, 1 Woodside Place, Glasgow
Scott, Jas., Distiller, Garrion Tower, Wishaw
Scott, J., Springfield House, Uddingston
Scott, M., Balmuildy, Bishopbriggs
Scott, William, Condorrat, Airdrie
Shirlaw, James, Carfin, Motherwell
Skead, George, Agent, Wishaw
Smith, Andrew, Castle Mains, Douglas
Smith, Alex., Westbourne, Govan
Smith, C., 36 Howard Street, Glasgow
Smith, G., 20 Lynedoch Street, Glasgow
Smith, H., 9 Kelvinside Terrace (North), Glasgow
Smith, James, Broomhill, Partick
Smith, James, 11 Dixon Street, Glasgow
Somerville, G. P., Muirhouse, Carnwath
Somerville, Wm., Cormiston, Biggar
Somerville, Wm., Merchant, Glasgow
Spencer, A., 160 Hope Street, Glasgow
Steel, John, Lochwood, Coatbridge
Stevenson, Wm., Lochgrog, Bishopbriggs
Stewart, John, Burnside, Strathaven
Stewart, Wm., 24 Maclean Street, Glasgow
Stewart, R. K., of Murdostoun, Newmains
Stodard, David, Banker, Lanark
Stodard, T. Tweedie, of Oliver, Rachan Mill
Strang, J., High Crewburn, Strathaven
Swann, James, Collierhall, Douglas
Symington, James, Auctioneer, Lanark
Tennant, T., of Priestgill, Strathaven
Tervit, John, Boat, Thankerton
Thomson, John, 49 Commerce Street, Glasgow
Thomson, W G., 49 Commerce Street, Glasgow
Thorburn, Robert, Stonehill, Lanark
Tudhope, G., 62 Pollock Street, Glasgow
Turnbull, Gregor, Merchant, Glasgow
Tweedie, A. Gladstone, Glespin, Douglas
Tweedie, James, of Quarter, Biggar
Ure, The Hon. John, Lord Provost of Glasgow
Vere, J. C. Hope, of Blackwood
Waddell, J., Airdriehill, New Monkland
Wallace, Hugh, Lancefield Boiler Works, Glasgow
Wallace, John, Stonelaw, Rutherglen
Wallace, W. (John Wallace & Sons), Graham Square, Glasgow
Warnock, A., Bearyards, Bishopbriggs
Watson, Adam, of Oggs Castle, Newbigging
Watson, Arthur, 416 Crown Street, Glasgow
Watson, John, 205 West George Street, Glasgow
Watson, John, of Earnock, Hamilton
Watson, John, Culterallers, Biggar
Watt, John, Drumgray, Airdrie
Watt, Robert, Solicitor, Airdrie
Wedderspoon, James, 88 Bath Street, Glasgow
Weir, James, Sandilands, Lanark
Weir, R., Sandilands Cottage, Lanark
White, John A., Shiells Mains, Biggar
White, Wm., of Mousebank, Lanark
Whyte, D., 326 Duke Street, Glasgow
Williams, Robert, The Green, Wishaw
Williamson, James, Greenhead, Wishaw
Willison, John, Parish Holm, Douglas
Wilson, George M., West Lodge, Pollokshields
Wilson, James, Burnetland, Biggar
Wilson, John, 22 Oswald Street, Glasgow
Wilson, John, Priestgill, Strathaven
Wilson, W., Water Meetings, Abington
Wingate, Andrew, Castlehill, Wishaw
Woddrop, W. A., of Dalmarnock, Dolphinton
Wood, James, 478 Duke Street, Glasgow
Wragg, Charles, 4 Stockwell Street, Glasgow
Young, Robert, Greenlees, Cambuslang
Young, Robert, 24 St Vincent Crescent, Glasgow
Young, Wm., Waterbank, Carmunnock
Yuill, Archibald, Netherside, Strathaven

LINLITHGOW.

Allan, J., Corn Merchant, Borrowstounness
Allan, James, jun., Borrowstounness
Arklay, John, Palace Lodge, Linlithgow
Armour, J., Niddry Mains, Winchburgh
BAILLIE, Sir William, of Polkemmet, Bart.
Bartholomew, J., Duntarvie, Winchburgh
Borthwick, John, V.S., Kirkliston
Brash, James, Hallyards, Kirkliston

Brock, J. E., East Overton, Kirkliston
Brownlee, James, East Whitburn Farm
Bryce, James, East Whitburn, Whitburn
Cadell, Henry, of Grange, Bo'ness
Cadzow, J., Clarendon, Linlithgow
Chalmers, T., of Longcroft House, Linlithgow
Chapman, James, Ballencrieff Mill, Bathgate
DALYELL, Sir R. A. O., of Binns, Bart.
Davidson, George, Walton, Linlithgow
Drysdale, A. L., Dalmeny Park
Dudgeon, Alexander, Easter Dalmeny
Dudgeon, George, Almondhill, Kirkliston
Fleming, James, Three-Mile-Town, Linlithgow
Fletcher, John, Bangour, Uphall
Forbes, W. F., of Lochcote, Bathgate
Gardner, Robert, Whitburn
Gillespie, James, Craigie, Cramond Bridge
Gillon, Col., of Wallhouse, Bathgate
Glen, Robert R., Banker, Linlithgow
Glendinning, G. P., Dalmeny Park, Edinburgh
Glendinning, P., Dalmeny Park, Edinburgh
Graham, William, Wheatlands, Cramond Bridge
Grieve, D., Blackberry Hill, Whitburn
Hare, Lieut.-Col., Philpston House, Winchburgh
Harper, F. V., Bridgend, Linlithgow
Henderson, Wm., of Redford, Linlithgow
Hill, John, Carlowrie, Cramond Bridge
Hog, Thos. A., of Newliston, Kirkliston
HOPE, Hon. Chas., of Bridge Castle, Bathgate
Hutchison, R., of Carlowrie
Jamieson, R. J., S.S.C., Borrowstounness
Johnston, John, Banker, Bathgate
Johnston, Wm., Writer, Bathgate
Law, James, East Mains, Broxburn
Learmonth, G. Gray, North Bank, Bo'ness
Lesslie, James, Boghall, Linlithgow
M'Lagan, Peter, of Pumpherston, M.P.
M'Kinlay, John, Hardhill, Bathgate
M'Vicar, Archd., Woodend, Bathgate
Masson, Rev. Alex., The Manse, Kirkliston
Meek, John, Flesher, Whitburn
Meikle, John, Grougfoot, Linlithgow
Meikle, Wm., East Breich, West Calder
Meikle, Wm., East Bonhard, Linlithgow
Mitchell, Geo., Broxburn Park, Broxburn
Morrison, J., West Dalmeny, South Queensferry
Orr, James, Hill, Whitburn
Reid, A., Haining Valley, Linlithgow
Reid, Peter, Waulkmilton, Linlithgow
Roberts, William, Auctioneer, Bathgate
ROSEBERY, The Earl of
Rough, Robert, Wellford, Broxburn
Russel, James, Dundas Castle, Queensferry
Shields, James, Byers, Bathgate
Somervail, P., Glendevon, Winchburgh
Steuart, Capt. R., of Westwood, West Calder
Stewart, G. M. F., of Binny, Linlithgow
Waddell, John, of Easter Inch
Waddell, John, Southrigg, Bathgate
Waddell, William, Netherton, Whitburn
Walker, Robt. Houston, of Hartwood, West Calder
Young, Thomas, Oatridge, Linlithgow

NAIRN.

Anderson, Robert, of Lochdhu, Nairn
Arres, William, Huntly Hall, Nairn
Cameron, Dr James Angus, of Firhall, Nairn
Campbell, Neil M., S.S.C., Nairn
Campbell, R. D., Redheugh, Nairn
CAWDOR, The Earl
Fraser, Robert, Brackla, Nairn
Fraser, William, of Kilmuir and Newton, Nairn
Joss, John, Budgate, Cawdor
Keir, Andrew T., Nairnside, Cawdor
Mackintosh, Bailie Hugh, Nairn
Mather, John Arres, Delnies, Nairn
Pender, John Menzies, Glenlyon Lodge, Nairn
Rose, Campbell, Fleenas, Nairn
Rose, Major James, of Kilravock, Nairn
Stables, W. A., Nairn

ORKNEY AND SHETLAND.

ORKNEY.

Balfour, Colonel David, of Balfour and Trenabie
Birse, John, Summerfield, St Ola, Orkney
Burroughs, Lieut.-General F. W. Traill, C.B., of Rousay
Cromarty, William, Widewall, St Margaret's Hope
Drever, James, Swanny House, Finstown
Fortesque, Archer, of Swanbister
Gibson, John, Langskail, Rousay
Johnston, James, junior, Hall of Tankerness, Kirkwall
Kirkness, John, Quoyostry, Rousay
Learmonth, D. H., Housebay, Stronsay
Learmonth, Robert, Westness, Rousay
Leitch, Simon, Elwickbank, Shapinshay
Seatter, William, Saviskaill, Rousay
Traill, R. M., Hobbister, Orphir
Traill, Thomas, of Holland, Kirkwall
Stevenson, William, Holland, Stronsay
Watt, W. G. T., Kierfiold House, Stromness

SHETLAND.

Bruce, John, of Sumburgh, Lerwick
Bruce, John, junior, Sumburgh, Lerwick
Edmonston, D. C., Ordale, Baltasound, Unst, Lerwick
Edmonston, Mrs, of Buness, Unst, Lerwick
Hamilton, Wm. Cameron, Baltasound, Unst
Hamilton, Zachray Macaulay, Symbister
Jaffray, James, Belmont, Unst
Sandison, Alexander, Uyasound, Unst
ZETLAND, The Earl of

PEEBLES.

Alexander, Arch., Merchant, West Linton
Alston, D., Hyndford Wells, West Linton
Beresford, J. G. M., yr. of Macbiehill
Black, William Connel, of Kailzie, Peebles
Blackwood, Alex., Stobo Mill, Stobo
Brydone, W. S., Portmore, Eddleston
Carmichael, G. H. G., Castle Craig
Carmichael, T. D. Gibson, yr. of Skirling
CARMICHAEL, Sir William H. Gibson, of Castle Craig and Skirling, Bart.
CECIL, Lord Arthur
CECIL, Lord Lionel
Deans, William, The Glen, Innerleithen
Dickson, Prof. A., of Hartree and Kilbucho, M.D.
Dyer, Matthew, Wood Merchant, Peebles
ELIBANK, Lord
FERGUSSON, Sir James R., of Spittalhaugh, Bart.
Forbes, W., of Medwyn
Forrest, George, Edston, Stobo, Peebles
Frier, Matthew, Kidston Mill, Peebles
Gordon, Charles, of Hallmyre, Lamancha
Greenshields, David, Garvald, Dolphinton
Harper, J., Traquair, Innerleithen
Hay, John Adam, yr. of Haystoun, Eshiels
HAY, Sir Robert, of Haystoun, Bart.
Johnston, Walter, Whitfield, West Linton
Lindsay, Tho., Flemington Mill, Lamancha
Linton, Simon, Glenrath, Manor

Mackenzie, C. J., of Portmore, Eddleston
Mackenzie, John Ord, of Dolphinton
Mackintosh, J., of Lamancha, Lamancha
MAXWELL-STUART, Hon. Henry Constable, of Traquair, Innerleithen
Melrose, Patrick, West Loch, Eddleston
MONTGOMERY, Sir G. Graham, of Stanhope, Bart.
Montgomery, John B. H., Stobo Castle, Stobo
Muir, G. W., Kirkhouse, Traquair
Murray, J. Wolfe, of Cringletie, Peebles
Paterson, J., South Slipperfield, West Linton
Shield, Walter, Nether Fala, Eddleston
Somerville, J., Birch Villa, Peebles
Stodart, Thomas Tweedie, of Oliver
Tennant, C., of the Glen, M.P., Innerleithen
Thom, Alex., Chapelhill, Peebles
Thomson, Alex., the Lee, Innerleithen
Tweedie, James, of Quarter
Waugh, John, Glenormiston, Innerleithen
Williamson, Miss Katharine Isabella, of Cardrona, Peebles
Wilson, J. F., Darnhall Mains, Eddleston
Wilson, Peter, Noblehall, Lamancha
Woddrop, W. A., of Dalmarnock, Dolphinton

PERTHSHIRE—Eastern Division.

Alexander, Thomas, Corn Factor, Perth
Allan, Alexander, Kinnon Park, Methven
Allan, John, Culthill, Dunkeld
Anderson, Archd. Turnbull, Perth
Anderson, Dr Arthur, C.B., Sunnybrae, Pitlochry
Anderson, Henry, Burnside, Stanley
Anderson, John, Royal Hotel, Blairgowrie
Anderson, John A., St Albans, Perth
Anderson, Peter, Duneaves, Fortingal
Anderson, Robert, Middlebank, Errol
Anderson, Robert, Drumnakyle, Pitlochry
ATHOLE, The Duke of, K.T.
ATHOLE, The Duchess Dowager of,
Ballingal, A. H., W.S., Perth
Barbour, G. F., of Bonskeid, Pitlochry
Beattie, James, Rockdale Cottage, Perth
Bell, William, Kennacoil, Dunkeld
Bett, James, Bolfracks, Aberfeldy
Bisset, Thomas S., Blairgowrie
Black, George, Victoria Street, Perth
Brooke, A. B., Cardney, Dunkeld
Brown, Peter, Milton of Duncarty, Redgorton
Bryden, John, Newmains, Scone, Perth
Butter Albert, Union Bank, Perth
Butter, Archd., of Faskally, Pitlochry
Cairns, James, 67 South Methven Street, Perth
Cairns, Robert, Bertha Park, Perth
Calder, James, of Ardargie, Forgandenny
Cameron, Duncan, Kinloch Rannoch
Cameron, J. C., of Garrows, Dunkeld
Campbell, Duncan, Stronuich, Aberfeldy
Campbell, J. L., of Achalader, Blairgowrie
Campbell, Thomas, Croftness, Aberfeldy
Carnegie, F. P., Merchant, Perth
Chalmers, James, Shielhill, Stanley
Chalmers, John, Westwood, Stanley
Christie, Gilbert, Auchlyne, Killin
Chrystal, George, Engineer, Perth
Clark, Robert, Taybank House, Errol
Conacher, P. M., Gallin Cottage, Aberfeldy
Craigie, W. R., Tom-na-Droighne, Ballinluig
Crawford, Andrew, Tayhill, Perth
Crawford, William, Balgarvie, Perth
Crerar, Alexander, Innerhadden, Rannoch
Crerar, Donald, Morenish, Killin
Crerer, John, Drumatherty, Dunkeld
Dick, Wm., of Tullymet, Ballinluig
Dickie, Joseph, Union Bank, Dunkeld
Dickson, John, W.S., Greenbusk, Perth
Dodds, James, Moncrieff Bank, Perth
Doe, John, Errol
Douglas, E. O., of Killiechassie, Aberfeldy
Dow, David, Balmanno, Bridge of Earn
Dow, David, jun., Balmanno, Bridge of Earn
Drummond, John, of Blackruthven, Perth
Drummond, J. M., of Megginch, Errol
Duff, James, Freeland, Bridge of Earn
Dunn, William, Kenmore Mains, Aberfeldy
Easson, Robert, Scones Lethendy, Perth
Fell, John Duncan, Flesher, Blairgowrie
Fenwick, James, Factor, Redgorton
Ferguson, James, Balunie, Coupar-Angus
Ferguson, Thos., Kinnochtry, Coupar-Angus
Ferguson, W. S., Pictston Hill, Perth
Fergusson, Donald, Dulcapon, Ballinluig
Fergusson, S. R., of Middlehaugh, Pitlochry
Fisher, Donald, The Hotel, Pitlochry
Fleming, Rev. A., of Inchyra, Hamilton House, Perth
Fletcher, Archd., Auchtertyre, Tyndrum
Forbes, Alexander, Pitfourie, Pitlochry
Forbes, Charles, W. L., Aberfeldy
France, C. S., Balboughty, Perth
Fraser, John M., Perth
Fullarton, James, Balgove, Coupar-Angus
Galloway, Alex., C.E., Tighnault, Aberfeldy
Galloway, David, Cairnie, Glencarse
Galloway, Peter, Loan of Errol, Errol
Geekie, Peter, Barclay Hill, Perth
Geekie, R., yr. of Baldowrie
Gibson, Charles, Pitlochry
Gillespie, James J., St Colmes, Ballinluig
Gloag, Wm. Ellis, of Kincairney, Dunkeld
Gold, Joseph, Murthly Farm, Perth
Graham, A. G. Maxtone, yr. of Cultoquhey, Perth
Graham, J. Maxtone, of Cultoquhey, Perth
Graham, William, Easter Caputh, Dunkeld
Granger, John, Pitcur, Coupar-Angus
Grant, John S., Tullymet, Ballinluig
Gray, E. A. Stuart, of Gray and Kinfauns
Gray, George, of Bowerswell, Perth
Gray, Jas., Kirkton of Collace, Balbeggie, Perth
Greig, Thomas, of Glencarse, Perth
Greig, T. Watson, Newton House, Glencarse
Grimond, Alex. D., of Glenericht, Blairgowrie
Gwyer, Cecil F., Murie House, Errol
Haggart, Peter, Keltneyburn, Aberfeldy
Hart, Andrew, Aberdalgie, Perth
Hay, Alex., Easter Cultmalundie, Perth
Hay, Colonel Drummond, of Seggieden
Heiton, Andrew, Perth
Hunter, Patrick, Argaith, Perth
Hutchison, Andrew, West Mill, Inchture, Perth
Hutchinson, Alan, Camserney Cottage, Aberfeldy
Imrie, James S., Somerset Villa, Perth
Irvine, Dr Wm. S., Pitlochry
Jameson, Melville, Solicitor, Perth
Jamieson, Alex., 31 Barossa Place, Perth
Jamieson, John, 31 Barossa Place, Perth
Johnston, James, Cattle Dealer, Perth
Johnston, Stewart J., Cattle Dealer, Perth
Keay, Robert, Assistant Town-Clerk, Perth
Keir, Patrick Small, of Kindrogan, Pitlochry
Kennedy, John, Royal George Hotel, Perth
Kerr, Thomas, Forehill, Caputh
Kerr, John, Rossie Ochil, Bridge of Earn
KINNAIRD, Lord
KINNAIRD, The Hon. the Master of
KINNOUL, The Earl of
Knight, W. G., of Jordanstone, Meigle
Kyd, George, Perth
Leslie, James, Thorn, Blairgowrie
Leslie, Robert C., of Butterglen, Dunkeld
Leslie, Thomas W., Welton, Blairgowrie
Livingston, John, Brae of Cluny, Tullypowrie
Low, Peter, V.S., Perth

Lowe, Robert, General Agent, Perth
Lowson, William, of Balthayock, Perth
Lumsden, David, Pitcairnfield, Perth
M'Cash, John, Grain Merchant, Perth
M'Corquodale, William, Jeanie Bank, Scone
M'Diarmid, Charles A., Rockwood, Killin
M'Diarmid, Duncan, Camuserricht, Rannoch
M'Diarmid, Robt., Glengowlandie, Aberfeldy
Macdonald, Major-General A. M'Ian, of Dalchosnie
Macdonald, Archd. Burns, Perth
Macdonald, D., Athole Arms Hotel, Blair Athole
Macdonald, J., Comrie Farm, Aberfeldy
Macdonald, Montague, yr. of St Martins, Perth
Macdonald, Lieut.-Col., Wm. Macdonald, of St Martins, Perth
Macdonald, William, of Balnakilly, Blairgowrie
Macdonald, William, Woodlands, Perth
M'Dougall, John, Goodlyburn, Perth
M'Dougall, Archd., Ardtalanaig, Kenmore
Macduff, Alex., of Bonhard, Perth
Macduff, Donald, Tomnagrew, Dunkeld
Macduff, Wm., Tomnagrew, Dunkeld
Macfarlane, David, Needburn, Methven
Macfarlane, Wm., Welltown, Meigle
M'Gregor, Athole, Eastwood, Dunkeld
M'Gregor, Arch., Glenlyon House, Aberfeldy
M'Gregor, Donald, Ballinluig
M'Gregor, John, Ladywell, Dunkeld
M'Intosh, James, Boatlands, Coupar-Angus
MACKENZIE, Sir Alex. M., of Delvine, Bart.
Mackie, J. H. J., Invermay, Bridge of Earn
Mackintosh, Dr C. H., of Dalmunzie
M'Laren, Charles, Cally Lodge, Dunkeld
M'Laren, John, Retreat House, Scone
M'Laren, Wm., Pittendrigh, Meikleour
MacLeish, Wm., Town-Clerk, Perth
M'Leish, Daniel, Wester Keillor, Methven
M'Leish, G. S., Wester Drumatherty, Dunkeld
M'Naughton, Alex., Remony, Kenmore
M'Naughton, Wm., Riechip, Dunkeld
M'Naughton, Alex., Tirarthur, Killin
M'Niven, Alex., Inneshewan, Killin
Macpherson, Allan, of Blairgowrie
M'Queen, James, Salutation Coach Office, Perth
M'Raw, Donald, Balnacraig, Fortingall
MANSFIELD, The Earl of, K.T.
Marshall, Rev. Theodore, Caputh Manse, Dunkeld
Martin, John, Parkhead Villa, Perth
Menzies, Fletcher Norton, Balmacneil, Ballinluig—*Secretary of the Society*
Menzies, James, Coshieville, Aberfeldy
Menzies, Dr James, of Pitnacree, Ballinluig
Menzies, Neil James, yr. of Menzies
MENZIES, Sir Robert, of Menzies, Bart.
Menzies, Robert, Tirinie, Aberfeldy
Menzies, W. G. Stuart, of Culdares
Mercer, Græme R., of Gorthy, Perth
Millar, Wm., Over Kinfauns, Perth
Miller, George, Flawcraig, Errol
Mitchell, Hugh, Banker, Pitlochry
Mitchell, James, Banker, Pitlochry
Mollison, James, Ruthven, Meigle
Moncrieff, Alex., W.S., Perth
Moncrieff, Lieut.-Col. A., of Barnhill, Perth
Morton, R. G., Engineer, Errol
Mundell, Jas. P., Auction Mart, Perth
Murray, C. A., Taymount, Stanley
Murray, Thos. Graham, Stenton, Dunkeld
Nairne, T. G., Dunsinnane, Perth
Nairne, William, of Dunsinnane, Perth
Ogilvy, Col. James W., Rannagulzion, Blairgowrie
Ogilvy, R. H. A., Millhill, Inchture
Ogilvy, Lieut.-Col. Thos. W., of Ruthven, Meigle
Panton, John, of Dalnagairn and Carsie, Blairgowrie
Panton, William, Maryfield, Blairgowrie
Paton, Jas., jun., Obney, Bankfoot
Paterson, George Frederick, of Castle Huntly, Longforgan
Patterson, Alex., Broombarns, Forgandenny
Peddie, William, 11 South Methven Street, Perth
Pirrie, James P., Coachbuilder, Perth
Pople, George, Newhouse, Perth
Pople, H. W., Royal British Hotel, Perth
Pople, J. B., of Newhouse, Perth
Potts, Andrew, Newton, Coupar-Angus
Powrie, Archd., Lairwell, Perth
Pullar, Robert, of Tayside, Perth
Ralston, James J., Old Faskally, Pitlochry
RAMSAY, Sir James Henry, of Banff, Bart.
Rattray, Major-Gen. J. C., of Craighall, Blairgowrie
Rattray, Dr James Clark, of Coral Bank, Blairgowrie
Reid, Donald, Edradour Distillery, Pitlochry
Reid, Dr J. B., Aberfeldy
RICHARDSON, Sir J. T. S., of Pitfour, Bart., Perth
Richmond, John, Dron, Bridge of Earn
Richmond, T., Hilton, Perth
Robertson, Mrs, sen., of Struan, Rannoch
Robertson, Alexander, Ballechin, Ballinluig
Robertson, Donald, Blackhill, Ballinluig
Robertson, Edgar W., of Auchleeks
Robertson, James, Blackhaugh, Dunkeld
Robertson, J. S., W.S., of Edradynate, Ballinluig
Robertson, J. S., yr. of Edradynate, Ballinluig
Robertson, John, Auchnahyle, Pitlochry
Robertson, John, Old Blair, Blair Athole
Robertson, John S., Belmont Estate Office, Meigle
Robertson, General Richardson, of Tullybelton, C.B.
Robertson, Wm., jun., Two-mile House, Murrayshall
Robertson, Wm., Engineer, Perth
Rollo, James, Rosemount, Perth
Ross, Thomas, Bachilton, Perth
Roy, Thomas, Craigclowan, Perth
Scott, Charles, Bradystone, Murthly
Scott, James G., Hill of Ruthven, Perth
Shields, John, Balhousie Castle, Perth
Sidey, James, Gourdie, Dunkeld
Small, James, of Dirnanean, Pitlochry
Smythe, David M., yr. of Methven, Perth
Smythe, William, of Methven, Perth
Speid, James, Forneth, Blairgowrie
Steel, Adam, yr. of Blackpark, Fairmount, Perth
Stephenson, J. B., Forteviot
Steuart, D. K., Munday, Aberdalgie, Perth
Steuart, John, of Ballechin, Ballinluig
Stewart, Alexander, Perth
STEWART, Sir A. Douglas, of Grandtully, Bart.
Stewart, Charles, Tighnduin, Killin
Stewart, Donald, Bruar, Blair Athole
Stewart, Donald, Little Fardle, Meikleour
Stewart, Duncan, Loak, Bankfoot
Stewart, Duncan Douglas, Castlehill, Inchture
Stewart, James, Blairfettie, Blair Athole
Stewart, James, Butcher, Coupar-Angus
Stewart, Jas., Pitskelly, St Martins, Perth
Stewart, William, Saddler, Aberfeldy
STORMONT, Viscount
STRATHALLAN, Viscount
Sutherland, George, The Peel, Tibbermuir
Talbert, Peter, Glenericht, Blairgowrie
Thomson, Thos., Cordon, Abernethy
Thomson, William, Coachbuilder, Perth

Trotter, Charles, of Woodhill, Blairgowrie
Walker, Alex., of Findynate, Ballinluig
Watson, William, Inchcoonans, Errol
Wedderspoon, Thos., Auctioneer, Perth
WHARNCLIFFE, Lord
White, Dr Francis, Perth
Willison, J., jun., Acharn, Killin
Wood, C. L., of Freeland, Bridge of Earn
Wyllie, William, Perth

PERTHSHIRE—Western Division.

Ainslie, Daniel, of the Gart, Callander
Allan, John, Crieffvechter, Crieff
Anderson, Alex., Kippenross, Dunblane
Anderson, James, Inverchagganie, Crianlarich, Stirling
Ballingall, D., Factor, Blairdrummond
Barty, Jas. W., Dunblane
Beveridge, Wm., jun., East Grange, Culross
Blair, James, Aberfoyle
Bontine, W. C. Graham, of Gartmore
Buchanan, Francis W., Leny, Callander
Cairns, William, Belhie, Auchterarder
Campbell, Lt.-Col. A. H., Ochtertyre
Carnegie, D., of Stronvar, Lochearnhead
Clark, Thomas K., Carriage Builder, Crieff
Carrick, Charles, Baad, Stirling
Carrick, T. A., Easter Cambusdrennie, Stirling
Cochran, Wm., Overdale, Dunblane
Cowan, Walter, Clathick House, Crieff
Cox, George A., of Invertrossachs, Callander
Cox, James C., Invertrossachs, Callander
Craig, John, Innergeldie, Comrie
Cumming, David, Knockieston, Crieff
Curr, Henry, Pitkellony House, Muthill
Currie, Peter, Hotel Keeper, Tyndrum
Dayton, Robert, Lochearnhead
Dewar, James, Cairnston, Dunblane
Dewar, John, Doune Castle Farm, Doune
Dewhurst, G. C., of Aberuchil, Comrie
Dow, James, Clathybeg, Auchterarder
Dron, William, Crieffvechter, Crieff
Dundas, Chas. Henry, Dunira, Crieff
Dundas, Colin M., Commander R.N., of Ochtertyre
Edington, Peter, Thornhill, Muthill
Finlayson, John, Harperstone, Braco
Forbes, Arthur Drummond, Millearne, Auchterarder
Fraser, Wm., Greenhill, Dunning
Gardiner, P., Rottearns, Braco
Gardiner, Patrick, Newbiggin, Auchterarder
Gardiner, Robt., of Rottearns, Auchterarder
Gibb, David, Lagrannoch Cottage, Callander
Glover, Andrew, Lanrick Castle, Doune
Græme, Robert, of Garvock
Grieve, Michael, Callander
Grieve, Robert, Edralaichach, Trossachs, Callander
Grieve, Robert, Auch, Tyndrum
Halley, George, New Mills, Culross
Halley, John, Dornoch Mills, Crieff
Hamilton, J. B. B., of Arnprior, Callander
Hamilton, John, Conenish, Tyndrum
Hamilton, J. B., of Leny, Callander
Hart, William, Pothill, Auchterarder
Home, G. H. Binning, of Argaty, Doune
Howden, John, Nether Braco, Braco
Hunter, Major Patrick, of Auchterarder
Jack, John S., Cambusdrennie, Stirling
Kay, Wm., Inch Farm, Kincardine-on-Forth
King, William, jun., Earne, Doune
Kinross, Andrew, Hungryhill, Dunblane
Kinross, Thomas, Loig, Braco
Kirk, James, Kaimknow, Muckhart
Lee, A. H., of Blairhoyle, Port of Monteith
M'Ara, Alex., Culdees, Muthil
M'Callum, Geo. Kellie, of Braco
M'Callum, James, Fendoch, Crieff
M'Callum, John, Bank Place, Crieff
M'Caull, Peter, Dykedale, Dunblane
M'Culloch, William, Crieff
Macdonald, John M. S., Monachyle, Lochearnhead
M'Dougall, John W., yr. of Orchill, Blackford
MacEwan, J., of Tar of Ruskie, Callander
M'Ewan, William, Cambushinie, Dunblane
Macfarlane, Donald, Auchray, Aberfoyle
Macfarlane, Malcolm, Hutchesontown, Dunblane
M'Gregor, John B., Curroch Farm, Crieff
M'Innes, Duncan, of Cowden, Comrie
MacIntyre, Donald, Tighnablair, Comrie
M'Isaac, John, Brae of Monzie, Crieff
Mackie, Peter, East Kirkton, Auchterarder
Maclachlan, James, Doune Lodge, Burn of Cambus
M'Laren, James, Solicitor, Crieff
M'Laren, John, Craggish, Comrie
M'Laren, J., Brae of Monzievaird, Crieff
Maclean, Duncan, Bellnollow, Crieff
M'Nab, John, Bracklin, Callander
M'Naughton, John, Inverlochlairg, Balquihdder
M'Naughtan, Robert, Inverardran, Crianlarich
M'Pherson, Lauchlan, Laggan, Crieff
M'Queen, J., of Boquhapple, Thornhill, Stirling
M'Rosty, James, Solicitor, Crieff
Marshall, W. H,, of Callander
Menzies, William, Keilator, Killin
Millar, C. H., of Blair Castle
Millar, David, Coachbuilder, Crieff
Millar, James, Mills of Torr, Blairdrummond
Miller, Hew, Westerton, Ochtertyre, Crieff
Miller, John, Lochland, Crieff
Moray, C. S. H. Drummond, of Blairdrummond, Stirling
Moray, Lieut.-Col. H. D., yr. of Blairdrummond, Stirling
Murray, John, Munnieston, Thornhill, Stirling
Murdoch, John Burn, of Gartincaber
Murray, Anthony, of Dollerie
Murray, David, Dunira, Crieff
MURRAY, Sir Patrick Keith, of Ochtertyre, Bart.
Paterson, John, Kirkton, Tyndrum
Paterson, Robert, Stock o' Broom, Blairdrummond
Raitt, James, Culcrieff, Crieff
Reid, William, Pittentian, Crieff
Richmond, G., of Balhaldie, Braco
Robertson, David, Allan Hill House, Dunblane
Robertson, D. G., of Torrie, Callander
Robertson, Neil, Auchtormore, Lochearnhead
ROLLO, Lord,
Ross, James E., Abercairney, Crieff
Sands, James, Milton, Burn of Cambus
Sharp, James, Viewfield, Blackford
Sharp, Peter, Bardrill, Blackford
Sharp, Thomas, Clathymore, Auchterarder
Sheppard, Rev. H. A. G., of Rednock
Speir, R. T. A., Culdees Castle, Muthill
Spence, A. White, Glencairn House, Crieff
Stark, M. C., Westerton Farm, Doune
Stewart, Duncan, Bank of Scotland, Callander
Stewart, Duncan, Monachyle, Callander
Stewart, John, Bochastle, Callander
Stewart, Joseph, Crianlarich, Tyndrum
Stewart, Robert, Kippenross, Dunblane
Stirling, Patrick, of Kippendavie, Dunblane
Stirling, T. Graham, of Strowan, Crieff
STRATHALLAN, Viscount
Thomson, Robt., Burnbank, Blairdrummond
Wallace, John, of Glassengall, Dunblane

Williamson, Col. David Robertson, of Lawers, Crieff
Wilson, Alexander, Alford House, Dunblane
Wilson, John, Lecroft, Bridge of Allan
Young, Alexander, Keir Mains, Dunblane
Young, Wm. S., Keir Mains, Dunblane

RENFREW.

Aitkenhead, Alex., Shawmoss, Pollokshaws
Andrew, Robert, Allans, Inchinnan
Bartlemore, R., Netherhouses, Lochwinnoch
Bartlemore, William, Solicitor, Paisley
BLANTYRE, Lord
Brown, A. C., Gledstane Park, Bishopton
Brown, Peter, Craigton, Bishopton
Burns, J., of Castle Wemyss, Greenock
Butters, M. W., Charlemont House, Cathcart
Caldwell, Hugh, of Braes, Kilbarchan
CAMPBELL, Lieut.-Col. Sir A. C., of Blythswood, Bart., Renfrew
Cattanach, A., of Auchintorlie, Paisley
Coats, Thomas, of Ferguslie, Paisley
COCHRANE, The Hon. Thomas, Hawkhead, Paisley
Colquhoun, J., Corkerhill, Pollokshaws
Cross, Alex., jun., Eastbank House, Langbank
Cross, David, of Eastbank, Lankbank
Cross, David, jun., Eastbank House, Langbank
Crum, Alex., of Thornliebank, M.P.
Cuninghame, J. C., of Craigends, Johnstone
Ferguson, A. R., Writer, Neilston
Ferguson, Peter, Rock Cottage, Renfrew
Gillies, William, Writer, Pollokshaws
Gilmour, Matt., Town of Inchinnan, Paisley
Glegg, J., Factor, Milliken House, Johnstone
Glen, Thomas, Thornhill, Paisley
Gordon, John, of Aitkenhead, Cathcart
Hardie, E. W., Locher House, Bridge of Weir
Herron, W., Town-Clerk, Renfrew
Holm, John, Jaapston, Neilston
Houstoun, George L., of Johnstone, Johnstone
Howie, William, Finnochbog, Inverkip
Hunter, James, Coplawhill, Strathbungo
Lang, Alex., of Borthrickfield, Bridge of Weir
Lang, Alex., Garneyland, Paisley
Locke, Matthew, Arthurlie, Barrhead
Lothian, M. J., Glenlora, Lochwinnoch
Love, Alex., Margaret's Mill, Kilmalcolm
Lowndes, J., of Arthurlee, Barrhead
Macdonald, John, Porterfield, Renfrew
Macdowall, H., of Garthland, Lochwinnoch
M'Ewen, John, of Glenlora, Lochwinnoch
MacGregor, P. Comyn, of Bredlland, Lonend House, Paisley
Mackay, Allan, Cross Arthurlee, Barrhead
M'Lachlan, Colin, Drums, Greenock
MacPhedran, J. M., of Craigbet, Bridge of Weir
Mather, Wm., Kirkhill, Newton Mearns
Maxwell, Wm. Hall, of Dargavel, Bishopton
Myles, James, Deanside, Renfrew
NAPIER, Sir R. J. M., of Milliken, Bart.
Nicolson, M. H. S., of Carnock, Ardgowan, Greenock
Park, Walter, Hatton, Bishopton, Erskine
Peile, H. R. B., Mansion House, Greenock
Pollock, John, Greenlaw, Mearns
Pollok, John, of Blackhouse, Mearns
Ramsay, John, Butcher, Kilbarchan
Reid, Robert, Writer, Lochwinnoch
Richardson, David, of Hartfield, Greenock
Richardson, George, Linwood, Paisley
Riddell, David, Blackhall, Paisley
Robertson, J., West Mitchellton, Lochwinnoch
Robinson, Archibald, M.R.C.V.S., Greenock
Salmon, J., The Linn, Johnstone
Scott, A., 24 Mearns Street, Greenock
Scott, J., Finnart House, Greenock
Scott, James B., Ryeraes, Linwood
Scott, Robt. Sinclair, Craigievar, Wemyss Bay
Steele, Robert, Greenock
Stewart, James, Rossland, Bishopton
STEWART, Sir M. R. Shaw, Bart.
Stodart, G., Netherton, Newton Mearns
Taylor, William, Park Mains, Inchinnan
Thomson, John, Prospect Hill, Cathcart
Wilson, James, Boghall, Bishopton
Wilson, Robert, Cove Gardens, Greenock
Wilson, Robert, Manswraes, Kilbarchan
Young, Hugh, Killoch, Neilston
Young, James, of Kelly, Wemyss Bay
Young, James, yr. of Kelly, Wemyss Bay

ROSS AND CROMARTY.

Adam, Æneas, Humberston, Dingwall
Allan, William, Drummondreoch, Ferrintosh
Arras, Walter, Fodderty, Dingwall
BAILLIE, Right Hon. Henry James, of Redcastle
Bethune, Murdo, Brae, Dingwall
Cameron, Colin M., Balnakyle, Munlochy
Cameron, Duncan, Fettes, Inverness
Catley, W. E., of Edderton, Tain
Chisholm, The, Erchless Castle, Inverness
Cruickshank, George, Ardmore, Tain
Darroch, Duncan, of Gourock, Torridon, Achnasheen
Davidson, Duncan H. C. R., of Tulloch, Dingwall
Douglas, Thomas, Mains of Rhynie, Fearn
Douglas, William, Arboll, Fearn
Ferguson, Ronald C. Munro, of Novar
Fleming, David G., Ardullie, Dingwall
Fletcher, James, of Rosehaugh, Avoch
Forsyth, John, Auchoyle, Parkhill
Fowler, J. A., yr. of Braemore
Fowler, Henry M., of Raddery, Fortrose
Goodbrand, James H. Culnaha, Nigg
Gordon, J. A., of Arabella, Udale, Invergordon
Gordon, John, Balmuchy, Fearn
Grant, George, Pollo, Invergordon
Grant, Kenneth, Dingwall
Gunn, William, Strathpeffer, Dingwall
Hall, Andrew, of Calrossie, Nigg Station
Hall, George Ross, Invergordon
Hall, John, Tomich, Invergordon
Harper, Frank, Torgorm, Dingwall
Henry, Matthew, Ankerville, Tain
Inglis, George, of Newmore, Invergordon
Irvine, George Forbes, Nigg
Kelman, William, Balnagore, Fearn
Littlejohn, Alex., of Invercharron, Ardgay
Macdonald, Alex., Novar, Evanton
MacDonald, A. S., Sunnyside, Invergordon
Macdonald, Donald, Culcraggie, Alness
M'Gregor, James G., Fearn
MacIntyre, P. B., Mains of Findon, Dingwall
M'Intyre, Robert, St Martins, Conan Bridge
Mackay, Henry, Shandwick Mains, Nigg
Mackay, William, Brucefield, Portmahomack
Mackenzie, Alexander, of Scatwell
Mackenzie, Andw., Dalmore Distillery, Alness
Mackenzie, Colin Lyon, of St Martins, Braelangwell, Dingwall
MACKENZIE, Sir Evan, of Kilcoy, Bart.
Mackenzie, James Fowler, of Allangrange, Munlochy
Mackenzie, Major J. D., of Findon, Dingwall
MACKENZIE, Sir James J. R., of Scatwell, Bart.
Mackenzie, James T., of Kintail
MACKENZIE, Sir Kenneth S., of Gairloch, Bart.
Mackenzie, Murdo, Banker, Tain
Mackenzie, Roderick G., of Flowerburn, Fortrose
Mackenzie, Thomas, of Ord, Beauly

Mackenzie, Wm. Delny, Delny Station
Mackenzie, Wm., Kinnairdie, Dingwall
Maclennan, Alex., Leanassie, Lochalsh
Maclennan, Donald, Hilton, Muir of Ord
Macleod, R. B. Æneas, of Cadboll, Invergordon
Maclellan, John, Fernaig, Strome Ferry
MacRae, Rod., Mains of Erchless, Beauly
MATHESON, Sir Alex., of Ardross, Bart., M.P.
MIDDLETON, Lord
Middleton, A. A., Rosefarm, Invergordon
Middleton, George, Cornton, Dingwall
Middleton, Jon., Davidston, Invergordon
Middleton, Jon., Clay of Allan, Fearn
Mitchell, Andrew, Ratagan House, Lochalsh
Mitchell, Andrew, Drumderfit, Inverness
Mitchell, James R., Drynie, Inverness
Monro, David, of Allan, Tain
Mundell, Walter, Eilanreach, Glenelg
Mundell, Walter, Moy, Muir of Ord
Mundell, W. G., Inverlael, Lochbroom
Munro, Alex., Ballintraid, Invergordon
Munro, Alex , Oakes Villa, Invergordon
Munro, Hector, yr. of Fowlis
Munro, John, of Swordale and Limlair, Dingwall
Murray, D., Gruinard, Poolewe
Murray, William, Kilcoy, Killearnan
Paterson, Wm. G., Scotsburn Invergordon
Peterkin, W., Dunglass, Conan Bridge
Petrie, George, Easter Suddie, Avoch
Preston, W. C., Achonachie Lodge, Muir of Ord
Robertson, Dr C., Auchtercairn, Gairloch
Robertson, Chas., of Kindeace, Invergordon
Robertson, John, of Rhynie, Fearn
Robertson, Peter, Achilty, Dingwall
Ross, David, Banker, Dingwall
Ross, Duncan Munro, yr. of Cromarty
Ross, D. A. Macbean, Banker, Tain
Ross, D. G., Merchant, Dingwall
Ross, George, Merchant, Dingwall
Ross, George of Pitcalnie, Parkhill
Ross, George, Invergordon
Ross, Lt.-Col. George W. H., of Cromarty
Ross, James, Balblair, Edderton
Ross, John, Meikle Tarrel, Fearn
Sellar, P. Plenderleith, Hartfield, Tain
Smith, Alex. P., Munlochy Farm, Munlochy
Smith, Andrew, Solicitor, Dingwall
Underwood, Peter, Braelangwell Mains, Invergordon
Walker, George A., Novar Mains, Evanton
Warrand, Major A. J. C., Ryefield, Ferrintosh
Young, James, Cadboll, Fearn

ROXBURGH.

Aitchison, Wm., Linhope, Hawick
Alexander, George, Easter Lilliesleaf, St Boswells
Ballingall, George, Clarilaw, St Boswells
Barrie, James, Harden Mains, Jedburgh
Blaikie, Wm. L., Holydean, St Boswells
Boog, T. E., Timpendean, Jedburgh
Borthwick, A. H., Ladiesyde Lodge, Melrose
Boyd, John B., of Cherrytrees, Kelso
Boyd, W. B., Faldonside, Melrose
Broad, Anthony, Edenside Road, Kelso
Brodie, J., Palacehill, Ancrum, Jedburgh
Brown, J., East Housebyres, Galashiels
Brunton, James, Broomlands, Kelso
Burn, John, Ednam, Kelso
Calder, Adam, Halterburn, Kelso
Calder, Francis, Yetholm Mains, Kelso
Carre, T. A. R., of Caverscarre, St Boswells
Charlton, M., jun., Browndeanlaws, Jedburgh
Clay, John, Kerchesters, Kelso
Cochrane, A. L., of Kingsknowes, Galashiels
Cochrane, Alex., of Ashkirk, Hawick
Croall, John, Coach Works, Kelso
Cunningham, C. J., of Muirhouselaw, The Tofts, Morebattle, Kelso
Cunningham, J. W. B., Grahamslaw, Kelso
Currie, Wm., of Linthill, St Boswells
DALKEITH, The Earl of, K.T.
DALRYMPLE, Hon. G. Grey, Elliston House, St Boswells
Davidson, Gilbert, Banker, Hawick
Davidson, Wm., Colmslie, Galashiels
Dickson, A., Hassendeanburn, Hawick
Dodd, Nicholas, Nisbet, Kelso
Dodd, James, Mossburnford, Jedburgh
DOUGLAS, Sir Geo. H. S., of Springwood Park, Bart, Kelso
Douglas, George, Upper Hindhope, Jedburgh
Douglas, George Sholto, 5 Abbotsford Grove, Kelso
Douglas, Thomas, Swinside Townhead, Jedburgh
Dryden, W., Springwood Park, Kelso
Dudgeon, J. S., Longnewton, St Boswells
Dunn, Andrew, jun., Kelso
Dunn, John, Ramsay Lodge, Kelso
Elliot, James, Galalaw, Kelso
Elliot, James, Burnhead, Hawick
Elliot, James T. S., yr. of Wolfelee, Hawick
Elliot, John, of Binks, Burnmouth, Newcastleton
Elliot, John, The Flat, Newcastleton
Elliot, Robert, East Nisbet, Jedburgh
Elliot, Robert Henry, of Clifton Park, Kelso
Elliot, Thomas, Hindhope, Jedburgh
ELLIOT, Sir Walter, of Wolfelee, K.C.S.I., Hawick
Elliot, Walter, Hermitage, Newcastleton
Elliot, Wm. B., of Benrig, St Boswells
Erskine, Charles, Chiefswood, Melrose
Fair, John S. Elliot, Wells, Jedburgh
Fairholme, Geo. K. Erskine, of Old Melrose
Forsyth, James (Hooper & Co.), Kelso
Gardiner, Robert, Gattonside, Melrose
Gibson, Thomas, Haymount, Kelso
Grieve, C. J., Branxholm Park, Hawick
Grieve, J., Borthwickbrae Burnfoot, Hawick
HADDINGTON, The Earl of
Haddon, Andrew, Honeyburn, Hawick
Haddon, Walter, Solicitor, Hawick
Hardie, David, Priesthaugh, Hawick
Hardie, Robert, Kelso
Henderson, D., of Abbotrule, Bonchester Bridge
Henderson, James, Mintokaims, Hawick
Henry, Lieut.-General, C.B., The Pavilion, Melrose
Hilson, George, jun., Solicitor, Jedburgh
Hobkirk, James, Broadhaugh, Hawick
Howie, James, Haddon Kelso
Johnston, J. S., Craillinghall, Jedburgh
Kay, Robert, Linton Bankhead, Kelso
Keir, Wm., of Whithaugh, Newcastleton
Kerr, James B., Commercial Bank, Kelso
Kerr, W. S., of Chatto, Sunlaws, Kelso
Laing, Thomas, Kelso
Laing, Walter, Manorhill, Kelso
Lawrie, Thomas, Newtown St Boswells
Lees, Richard, Drinkstone, Hawick
Lockhart, W. Elliott, of Borthwickbrae
LOTHIAN, The Marquis of, K.T.
Maconochie, J. A., Gattonside House, Melrose
Maconochie, Robert Blair, of Gattonside Melrose
Macpherson, Donald, Wolfelee, Hawick
Maxwell, E. H., of Teviotbank, Hawick
Maxwell, John, Coachbuilder, Kelso
Mein, A. W., of Hunthill, Jedburgh
Mein, Ben., Roxburgh Barns, Kelso
Mills, Geo., Elm Bank, Melrose

MINTO, The Earl of
Munro, John, Fairnington, Roxburgh
Murray, John, of Wooplaw, Galashiels
Murray, R. W. E., Wester Housebyres, Galashiels
Murray, W. G. G., Kersknowe, Kelso
Ogilvie, George, Holefield, Kelso
Oliver, James, of Thornwood, Hawick
Oliver, John, Borthaugh, Hawick
Oliver, Robert, of Blakelaw, Lochside, Kelso
Oliver, Wm. M., Howpasley, Hawick
Ormiston, W. T., of Glenburn Hall, Jedburgh
Otto, Wm. E., Jedneuck, Jedburgh
Panton, Patrick, of Edenbank, Kelso
Paton, John, of Crailing, Kelso
POLWARTH, Lord
Pott, Gideon, of Dod
Pringle, David, of Wilton Lodge, Hawick
Purdom, Walter, Blinkbonny, Roxburgh
Rawdin, Joseph, Chemist, Jedburgh
Renwick, John, Nurseryman, Melrose
Richardson, R., Crailingnook, Jedburgh
Riddell, Wm., Hundalee, Jedburgh
Roberton, John, Falside, Stitchel, Kelso
Roberton, Robert, Ladyrig, Kelso
Robeson, Geo., Brotherston, Kelso
Robson, Charles, Lurdenlaw, Kelso
Ross, Richard, Rutherford, Kelso
ROXBURGHE, The Duke of
Roy, Fred. Lewis, of Nenthorn, Kelso
Rutherfurd, W. A. Oliver, of Edgerston
Scott, George, Caverton Mill, Kelso
Scott, James Addison, of Wooden, Kelso
Scott, John Corse, of Sinton, Hawick
Scott, J. S. E., Kirndean, Newcastleton
Scott, Dr J. Robson, of Ashtrees, Yetholm
Scott, Robert, Falnash, Hawick
Scott, T., of Mersington, Whitton, Kelso
Scott, T. Robson, of Newton, Jedburgh
Scott, W., Mervinslaw, Jedburgh
Scott, Wm., Spylaw, Kelso
SCOTT, Sir W., of Ancrum, Bart., Jedburgh
Selby, Robert, Hassendean Bank, Denholm, Hawick
Selby, E., Hassendean Bank, Hawick
Shortreed, R., Attonburn, Yetholm
Simpson, George, Bedrule, Jedburgh
SINCLAIR, Lord
Smith, James, Kelso
Smith, John, Darnick, Melrose
Sprot, Mark, of Riddell, Lilliesleaf
Steuart, Chas. Edward, Cleithaugh, Jedburgh
Stavert, Archd., of Hoscote
Stedman, James, Boundary Bank, Jedburgh
Storie, W. G. R., Lanton, Jedburgh
Swan, Robert, Writer, Kelso
Tait, James, Banker, Kelso
Tait, William, Vencheon, Kelso
Thomas, W., of Pinnacle, Ancrum, Jedburgh
Thompson, John, Bailieknowe, Kelso
Thomson, A., of Mainhill, St Boswells
Thomson, Geo., Hopton, Ancrum, Jedburgh
Thomson, Rev. John, of Rosalee, Hawick
Turnbull, David, of Brieryyards, Hawick
Turnbull, J., Lempitlaw, Eastfield, Kelso
Turnbull, John, East Middle, Hawick
Turnbull, Mark, Melrose Mills, Melrose
Turnbull, Wm. J., Graden, Kelso
Turnbull, W. Geo., Spittal, Jedburgh
Usher, John, Stodrig, Kelso
Usher, J., jun., Gatehousecote, Hawick
Usher, Thomas, jun., Courthill, Hawick
Waddell, Alex., of Palace, Jedburgh
WALDIE-GRIFFITH, Sir G., of Hendersyde Park, Bart.
Wauch, John, Langshaw, Galashiels
Welsh, John, Kirkton, Hawick
Wilson, George, Manufacturer, Hawick
Wilson, J., Bemersyde West, St Boswells

SELKIRK.

Anderson, B. T. G., of Tushielaw, Selkirk
Anderson, G., of Hawthorn Bank, Selkirk
Boothby, R. C., Hyndhope, Selkirk
Brunton, J. S., Ladhope House, Galashiels
Brydon, Adam, Netherbarns, Galashiels
BUCCLEUCH and QUEENSBERRY, The Duke of, K.G.
BUCCLEUCH and QUEENSBERRY, The Duchess of
Connochie, William Dixon, V.S., Selkirk
Dennistoun, J. W., of Dennistoun, Harewood Glen, Selkirk
Dun, John, jun., Galashiels
Elliot, A. T., Newhall, Galashiels
Elliot, Thomas, Blackhaugh, Galashiels
Elliot, Walter, Hollybush, Galashiels
Forsyth, Walter, Whitlee, Corslee, Stow
Harkness, W. I., Shaws, Ettrick, Selkirk
Hay, J. Tonner‘ of Whitmuir, Selkirk
Hogg, Thomas, Lewinshope, Selkirk
Howatson, J. L., Ramsaycleuch, Selkirk
Johnstone, James, of Alva
Laidlaw, Robert, Rodono, Selkirk
Lang, Hugh M., of Broadmeadows, Selkirk
Lang, Robert J., Broadmeadows, Selkirk
Lindsay, John V., Whitehope, Selkirk
Linton, W. T., Mount Benger, Selkirk
M‘Queen, John, Oakwood, Selkirk
Mangin, W. N., Catslackburn, Yarrow, Selkirk
Mitchell, Thomas, Middlestead, Selkirk
Muir, John, Dryhope, Yarrow, Selkirk
NAPIER and ETTRICK, Lord, K.T.
Pattison, J. P., of the Haining, Selkirk
Pott, George, of Potburn, Jedburgh
Pringle, Alex., of Whytbank, Selkirk
Pringle, J. T., of Torwoodlee, Galashiels
Reekie, Wm., Carterhaugh, Selkirk
Riddell, John, Rink, Galashiels
Rodger, Peter, Selkirk
Scott, John, of Gala, Galashiels
Scott, H. J. E., Gala House, Galashiels
Turnbull, A., Eldinhope, Yarrow, Selkirk
Turnbull, James, Fauldshope, Selkirk
Wilson, George, Greenhill, Selkirk

STIRLING.

ABERCROMBY, Lord
Aitken, John G., Southfield, Stirling
Aitkenhead, William, Roughlands, Larbert
Alexander, Gen. J. E., C.B., of Westerton
Anderson, of, of Inchyra Grange, Polmont
Anderson, Robert, Stirling
Baird, Henry, Abbotsgrange, Falkirk
Bain, S. F., Inch of Leckie, Gargunnock
Bartholomew, H., of Glenorchard, Torrance of Campsie
Bayne, John, Builder, Bridge of Allan
Beith, Gilbert, Ballochneck, Buchlyvie
Bell, Robert, of Lunna, Belmont, Falkirk
Best, John, Inveravon, Polmont
Bett, David Inches, Seaforth House, Bridge of Allan
Binnie, Thomas, Auction Mart, Falkirk
Blackburn, James, Killearn House
Bolton, J. C., of Carbrook, M.P.
Brodie, Tho. Dawson, of Gairdoch
Brown, Andrew, Kerse, Falkirk
Brown, John, Brownville, Kilsyth
Brown, John A. H., of Quarter, Dunipace
BRUCE, Sir Wm. C., of Stenhouse, Bart.
Bryce, J. H., M.R.C.V.S., Stirling
Buchanan, Alex., Whitehouse, Stirling

Buchanan, D. M. B., of Boquhan, Killearn
Buchanan, George, of Arden, Bridge of Allan
Buchanan, John, Gartness, Killearn
Buchanan, Robert, Blairquosh, Strathblane
Buchanan, Robert, Letter Farm, Killearn
Buntine, J. R., Stirling
Burrell, James, Denovan Mains, Denny
Cairns, James, Balquharn, Menstrie
Campbell, Capt. Henry J. Fletcher, R.N., Boquhan
Campbell, T. H., of Millfield, Polmont
Campbell, Edward P., Lieut. 42d Highlanders, Stirling
Christie, James, Cultenhove Mains, St Ninians
Connal, Michael, of Arngomery, Kippen
Coubrough, J., Blairtummoch, Lennoxtown
Couper, James, Craigforth, Stirling
Dawson, John M., Elcho House, Balfron
Dewar, A., Arnprior, Kippen
Dewar, David, Shaw of Touch, Stirling
Dewar, Peter, King's Park, Stirling
Douie, J. R. L., Polmaise, Stirling
Drummond, Henry, Seedsman, Stirling
Drysdale, Robert, Old Mills, Craigforth, Stirling
Duncan, A. R., Blairquosh, Strathblane
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Edmond, John, Gallamuir, Bannockburn
Edmond, Wm., Cowie, Bannockburn
Edmond, Wm., Hillhead of Catter, Drymen
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Elphinstone, Hon. E. C. B., Carnock House, Larbert
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Ewing, A. E. Orr, Cardross House, Port of Monteith
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Finlayson, Matthew, Poppletrees, Stirling
Finlayson, Wm., Kersie Mains, South Alloa
Fleming, Hugh, Lower Ballaird, Balfron
Fleming, James, Carmuirs, Falkirk
Forbes, William, of Callendar, Falkirk
Foyer, David, Knowehead, Campsie
France, Robert, Craigbank House, Stirling
Freeland, James, Broadgate, Strathblane
Galbraith, J., Croy Cunningham, Killearn
Galbraith, T. L., Town-Clerk, Stirling
Gardner, Peter, Dunmore Pottery, Stirling
Gardner, Wm., Cashley, Buchlyvie
Gartshore, John, Seedsman, Falkirk
Graham, James, Myothill, Denny
Graham, W. Stirling, of Airth, Larbert
Gray, Andrew, West Plean, Bannockburn
Gray, James, Birkenwood, Gargunnock
Gray, James, Seedsman, Craigs, Stirling
Gray, Patrick, Middle Strath, Falkirk
Guild, And., Rhoders, Alva
Hamilton, Alex., Commercial Bank, Stirling
Hamilton, W. F., Callendar Park, Falkirk
Hay, James S., Clydesdale Bank, Falkirk
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Hendrie, John, of Larbert
Inglis, John, Kepdarroch, Gargunnock
Jaffray, William, Broomridge, St Ninians
Jardine, James, Killunan, Fintry
Jardine, Wm., Bogside, Fintry
Johnstone, James, of Alva, Stirling
Kay, Charles, Mill Farm, Gargunnock
Kay, Robert, Mainz Farm, Gargunnock
Keir, Duncan, Buchlyvie, Stirling
Kemp, John, Agricultural Implement Maker, Stirling
Ker, Robert, of Dougalston, Milngavie
Ker, T. Ripley, yr. of Dougalston, Milngavie
Kerr, Robert, Ballikinrain, Killearn
Keyden, James, Cattle Salesman, Stirling
Kier, Thomas, Newlands, Falkirk

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Leishman, T., 25 Park Terrace, Stirling
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M'Ewen, John, Merchant, Stirling
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Macfarlane, Samuel, Meadowbank, Torrance of Campsie
Macgregor, Alex., Easter Culmore, Gargunnock
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Mackay, John S., Banker, Grangemouth
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Miller, Thomas, of Myres, St Ninians
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Morries Stirling, J. M., Gogar House, Blairlogie
Morrison, James M., Banker, Stirling
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Murray, Lieut.-Col. C. S., Sauchie, Stirling
Murray, James, Gartur, Stirling
Murray, James, Catter House, Drymen
Murray, Lieut.-Col. John, of Polmaise, Stirling
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Norris, Peter, Todholes, Fintry, Stirling
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Paton, John, of Viewforth, Stirling
Paton, Robert, West Drip, Stirling
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Patterson, Robert, Queen Street, Stirling
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Peat, John, Manor, Stirling
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Pollock, George, Seedsman, Stirling
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Raines, Thomas, Bridgehaugh, Stirling
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Rennie, James, Corrie, Kilsyth
Rennie, John, Cragieburn, Falkirk
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Ure, George R., Hope Park, Bonnybridge
Ure, William, Bogton, Larbert
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Weir, William, Inches, Larbert
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Barclay, Thomas, Skelbo Castle, Dornoch
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Crawford, John, The House of Tongue, Lairg
Dudgeon, John B., Crakaig, Golspie
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Fraser, W. S., Banker, Dornoch
Gilchrist, Dugald, of Ospisdale, Dornoch
Grant, Colonel W. L., Borgie House, Farr, Thurso
Gunn, Alexander, Dornoch
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Hill, Robert, Navidale House, Helmsdale
Hill, Robert Robertson, Navidale House, Helmsdale
Houstoun, Wm., of Kintradwell, Golspie
Lawrie, Robert, Glencassley, Invershin
M'Iver, Evander, Scourie House, Lairg
Marshall, John, Clebrig, Lairg
Menzies, Duncan, Blairech, Lairg
Mitchell, Wm., Ribigill, Tongue, Sutherland
Scobie, John, Keoldale, Lairg
Scott, John, Clebrig, Lairg
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Sutherland-Walker, E. C., of Skibo

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Agnew, R. V., of Sheuchan and Barnbarroch, Bart.
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Lusk, Peter, Craigcaffie, Stranraer
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M'Clew, John. Dinvin, Portpatrick
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M'Dowall, A. H., Seedsman, Stranraer
M'Dowall, T. N., Auchtralure, Stranraer
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M'Haffie, Wm. J., of Torhousemuir, Wigtown
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M'Lean, James, Clerk of Supply, Wigtown
Maclelland, Thos., North Balfern, Kirkinner
M'Master, Allan, Glenhead House, Stranraer
M'Master, Hugh, Blairbuie, Port William

M'Master, James, Carrochtree, Stranraer
M'Master, John, Culhorn Mains, Stranraer
M'Master, William, Challoch, Dunragit
M'Whinnie, Alex., Airyolland, Port William
M'William, Robert, Craichmore, Stranraer
Martin, William, Larbrax, Stranraer
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Milroy, John, Balgreggan Mains, Stranraer
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Paterson, John, Colfin, Portpatrick
Picken, Thomas, Barsalloch, Port William
Picken, R., Barnkirk, Newton Stewart
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Ralston, Wm. H., Culmore, Stranraer
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Routledge, J. J. F., Old Mill, Port William
Routledge, Wm., Elrig, Port William
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Stewart, R. H. J.. of Physgill, Glasserton
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Thompson, Alex., Barmeal, Port William
Todd, James, Gillespie, Glenluce
Todd, William, Auchness, Ardwell
Todd, William, Balsier, Sorbie
Walker, William, Garlieston
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Wilson, John, West Freuch, Stranraer
Wither, James, Lagganmore, Portpatrick
Young, J. A., Orchardtown, Garliestown

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Gordon, R. W., Only Grounds, Rugby
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Henderson, W., East Elrington, Haydon Bridge
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Holliday, Wm., Plumbland, Aspatria, Carlisle
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Edinburgh, *March* 1883.

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